

Guarding the Gates

**The Story of Fort Clayton—Its Setting, Its Architecture,
and Its Role in the History of the Panama Canal**

Susan I. Enscore

Suzanne P. Johnson

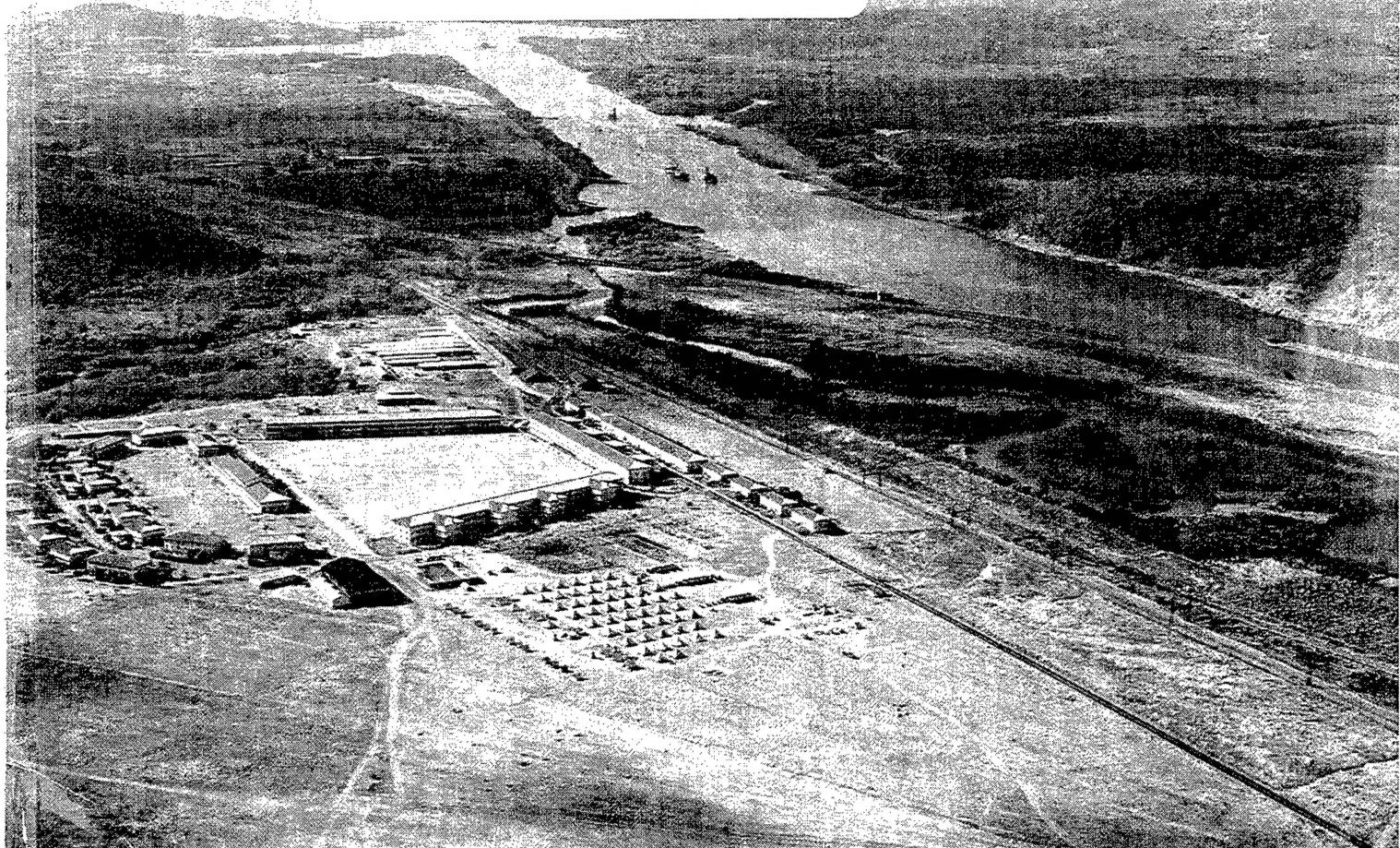
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Preface

Overview

The Panama Canal Treaty and Allied Agreements of 1977 between the United States and the Republic of Panama (RoP) governed the operation, maintenance, and defense of the Panama Canal from their implementation on 1 October 1979 until 31 December 1999. At noon on that date, the Panama Canal Treaty terminated and the RoP assumed full control and responsibility for the operation, maintenance, and defense of the Panama Canal. The U.S. military presence in the former Panama Canal Zone ceased at that time and all remaining Department of Defense (DoD) property in the area reverted to the RoP.

In anticipation of the scheduled transfer of this DoD property, efforts have been made to produce a lasting record of U.S. military buildings and installations in the former Panama Canal Zone. Personnel from the U.S. Army Construction Engineering Research Laboratory (CERL), working in cooperation with various DoD services and commands in Panama, have spent 7 years producing site-specific documentation related to the developmental history of DoD installations in the RoP. Of those installations, Fort Clayton was among the very last properties to be transferred to the RoP. As previous documentation efforts focused on installations being transferred more quickly, Fort Clayton's physical legacy remained largely unrecorded. With less than a year remaining before treaty termination, discussions began concerning the creation of a comprehensive history of Fort Clayton based upon its built environment. The CERL personnel and U.S. Army South (USARSO) officials agreed on the need for such a history, and this project was born.

Fort Clayton has played a long and distinguished role in the defense of the Panama Canal and related U.S. strategic interests, as its existence covered most of the 20th century. The objective of this project was to trace the growth and development of Fort Clayton with an emphasis on how the Army's mission and doctrine shaped the post's architecture and land use planning. This book assures a permanent record of the physical legacy of Fort Clayton and its significance in the history of the U.S. military presence in Panama. It also provides compliance with DoD's 1992 Overseas Environmental Baseline Guidance Document regarding stewardship of DoD cultural resources. In addition, the document will provide the RoP with valuable information for their own determinations of historic significance now that the installation is their property.

Sponsorship, Funding, and Administration

This study was conducted for the Theater Support Brigade, USARSO under Military Interdepartmental Purchase Request (MIPR) 9K9DEH00039, dated 23 August 1999. The technical monitor was Mr. Stuart G. R. Warner, Command Historian, USARSO.

The work was conducted by the Land and Heritage Conservation Branch (CN-C) of the Installations Division, Construction Engineering Research Laboratory (CERL), Champaign, Illinois. The Principal Investigator was Julie L. Webster, CEERD-CN-C. Mr. Robert A. Riggins is Chief, CEERD-CN-C, and Dr. John T. Bandy is Chief, CEERD-CN. Dr. William D. Severinghaus is Technical Director of the Military Land Management business area. The Acting Director of CERL is Mr. William D. Goran.

CERL is an element of the Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Director of ERDC is Dr. James R. Houston and the Commander is COL James S. Weller.

Research, Preparation, and Production

Dr. Susan I. Enscore and Ms. Suzanne P. Johnson conducted the research for this publication and prepared the manuscript. Dr. Enscore has served as historian for almost all Panama-related cultural resource projects undertaken by CERL. She has spent countless hours researching archives both onsite in Panama and in U.S. national historic document repositories. Ms. Johnson worked as Cultural Resource Manager (Volunteer) for the Directorate of Engineering and Housing (DEH), U.S. Army Garrison-Panama, from 1992 to 1995, and as Archives Specialist for the DEH from 1995 to 1996. Ms. Julie L. Webster, a Registered Architect in the State of Illinois, has served as the project manager and principal architect for almost all CERL Panama-related cultural resource projects. She is also a nationally recognized authority on historic military aviation hangar architecture. Mr. Gordon L. Cohen, who worked as the staff writer and managing editor for this project, previously worked as a journalist and business writer, and has served as the technical editor of CERL reports related to Panama and military architectural history. Mr. Martin Stupich served as the project photographer, contributing many high-quality architectural portraits of Fort Clayton's buildings and landscapes just prior to transfer of the property to the Republic of Panama in December 1999. Ms. Debra K. Krites was the editorial assistant at CERL for this project; she edited text, proofread copy, and processed several global revisions of the manuscript that required extraordinary attention to detail.

Art direction of this project was a joint effort of Ms. Webster and Mr. Cohen.

Acknowledgments

The Fort Clayton documentation included in this report was based on both archival and field investigations conducted in Panama as well as repositories in the United States. As such, the authors are indebted to a great many people for their assistance and support. First and foremost, we would like to thank LTC Patrick Staffieri, former Director, DEH, U.S. Army Garrison-Panama. He ably conveyed his enthusiasm for this project to others, thereby providing the necessary support to make the project a reality. Mr. Raul Irigoyen, former Deputy Director, DEH, graciously provided logistical support. The "on the ground" experience of Mr. Ivan Klasovsky, former Chief, Plans and Property Branch, Engineering Division, DEH, proved invaluable in answering questions about countless details of Fort Clayton's development. Mr. Stuart G. R.

Warner, USARSO Historian, provided archival materials located at U.S. installations in the RoP. Mr. Warner, Mr. Klasovsky, and LTC Staffieri all served as reviewers for this project, as did Mr. Stanley Leon, former Staff Engineer, DEH. Their knowledge, insight, attention, and thoughtful comments improved the quality of this effort.

The USARSO Public Affairs Office provided us with hundreds of photographs to consider for inclusion. Mr. Charles S. McElroy of the *Tropic Times* was particularly helpful in providing useful photographic and textual information. Several individuals currently possess large private collections of photographs pertaining to Fort Clayton. For their generosity in providing us access to their collections, we are indebted to Mr. Vicente A. Pascual, Mr. George M. Chevalier, Mr. James H. Sauer, and Mr. Robert Karrer.

Several individuals graciously consented to interviews and allowed us to use some of their remarks verbatim in the book. We would especially like to thank Mr. Leon as well as Mr. Sauer, Mr. Richard Holzer, Mr. David Clark, Mr. Robert H. Tippett, Mr. Wayne Worthington, Mr. Robert Maki, and Mr. Allan R. Small. Through a letter to the members of the 33rd Infantry Regimental Combat Team Association, we came into contact with dozens of veterans who had served in the Panama Canal Zone, many on Fort Clayton itself. In particular, Mr. Louie C. Jenkins and Mr. Martin A. Peters went above and beyond the call. Mr. Jenkins sent us a goldmine of information, particularly photographs. Mr. Peters, not content with sending his own memoirs and photos, spent weeks contacting other veterans who, not being members of the 33rd Infantry Association, had missed our request for information. Through the correspondence of all those who answered our plea, we have been privileged to gain access to personal memories and photographs which brought the early years at Fort Clayton to life for us. Any sense of Fort Clayton as a living community conveyed by this book is largely due to their willingness to share a particular time in their lives. They all recalled Fort Clayton as a very special place, held in their hearts with affection.

With such a wealth of textual and visual resources at our disposal, and only a limited number of pages to work with, it was inevitable that much interesting and engaging information could not be included directly in the final published product. Each and every submission was used for purposes of analysis and perspective, but ultimately we had to eliminate many wonderful contributions for no reason other than a regrettable lack of space.

The individuals acknowledged above provided invaluable information, advice, and support in the preparation of this book. The authors thank them for their participation, but take sole responsibility for any errors or omissions.

**Dr. Susan I. Enscore
Suzanne P. Johnson
Julie L. Webster, RA
Gordon L. Cohen**

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CHAPTER 1

Origins of the U.S. Presence in Panama (1513–1917)

Early European Exploration and Colonization of the Isthmus

Over the course of the 20th century, the Panama Canal has most often been associated with the United States, but interest in the concept of a navigable passage from the Atlantic Ocean to the Pacific through the isthmus was born almost five centuries ago in Europe. Christopher Columbus searched for such a waterway on his final voyage. Vasco Nuñez de Balboa crossed the isthmus overland in 1513 and claimed it for Spain on his way to discovering the Pacific Ocean. The tantalizing closeness of the two oceans immediately inspired ideas of engineering a connecting waterway. Charles I of Spain (Holy Roman Emperor Charles V) desired such a passage, and in 1534 he issued a royal decree to the regional governor ordering that a survey be conducted to determine the feasibility of excavating a canal. The governor reported that the survey showed such a feat would be impossible, but the prospective route surveyed from the Chagres River to the Pacific did in fact come close to the actual canal route plotted centuries later.

Soon after Balboa's historic discovery, European awareness of the Pacific coast spurred an interest in creating new settlements. In 1519 Isthmian Governor Pedro Arias de Ávila (Pedrarias Dávila) founded Panama City,¹ and this settlement quickly evolved into the Pacific terminus for the two major trans-isthmian routes: the Camino Real and the Las Cruces Trail. The Camino Real led overland across to the Atlantic coast towns of Portobelo and Nombre de Dios. The Las Cruces Trail led overland to the interior town of Las Cruces, then utilized the Chagres River to complete the crossing at the port of San Lorenzo. These trails became an important part of the trade route between Spain and South America, facilitating the exchange of South American precious metals and other raw materials for goods produced in Europe. During the 1600s, coastal raids by English pirates compelled Spain to build fortifications at their isthmian ports. The raids continued, however, and by the mid-1700s Spanish merchants had found it more profitable to avoid the isthmus altogether, sailing their ships around Cape Horn instead. For the next 200 years, then, Panama served a greatly diminished role as a trade route.²

The political situation changed drastically in the early 19th century as revolutionary movements in Central and South America ended Spanish colonial rule in the region. Panama declared its independence from Spain on 28 November 1821. To support its bid for independence the new leaders of Panama needed military support. As a result they decided to unite with the newly liberated Republic of Gran Colombia to the south, founded two years earlier by Venezuelan revolutionary Simon Bolivar. (Gran Colombia included today's nations of Colombia, Venezuela, and Ecuador.) When Gran Colombia split apart in 1831 Panama was annexed by the new Republic of Colombia.³

A President's Haunting Memories of Panama

In the mid-1800s, before the completion of a transcontinental railroad, the fastest way from the U.S. Atlantic coast to California was by sailing to Panama, then riding overland across the isthmus followed by another marine voyage up the Pacific coast. The shortest land route across the isthmus involved a float up the Chagres River to Gorgona or Cruces, then a journey of about 25 miles via mule path to Panama City. During the dry season this leg of the trip was not bad, but during the rainy season it could amount to a horrendous week-long ordeal. By the time General Ulysses S. Grant was inaugurated as the 18th U.S. president, the potential benefits of an isthmian

canal were well known to many political and business leaders. But in the mind of President Grant, Panama represented something much different than a parcel of tropical real estate with commercial potential.

In July 1852, the young Lieutenant U.S. Grant (Brevet Captain) served as regimental quartermaster for the U.S. Army Fourth Infantry, which had been ordered to garrison duty in San Francisco via Panama in response to a jurisdictional dispute brewing with England over the Oregon Territory. Grant was in charge of the feeding, shelter, transportation, and baggage of several hundred soldiers and their dependents. The trek

across the isthmus quickly degenerated into a nightmare that Grant would never forget. In addition to logistical disasters such as lost supplies and price gouging for transportation, cholera ravaged the group of 800. Grant saw 150 members of his party—men, women, and children—die of disease before arriving at Camp Benicia after 51 days. He later wrote that “[t]he horrors of the rainy season are beyond description.”⁶ In light of Grant’s experience it is perhaps understandable that, as President of the United States, he advocated the construction of an Isthmian Canal through Nicaragua—not Panama.⁷

The U.S. Becomes Interested

The 1848 discovery of gold in California focused U.S. interest on the isthmus as a shortcut from the east coast to the west coast. At that time the first U.S. transcontinental rail line had not yet been completed, and by 1849 thousands of men were crossing the isthmus every year to seek their fortune. Despite terrible physical conditions, the crossing was worth it as traveling from New York to San Francisco via the isthmus instead of Cape Horn saved 8000 miles. In 1850, the American-owned Panama Railway Company began construction of an isthmian railway. The rail line was completed after 5 years at a cost of \$8 million and the lives of almost 6000 workers. However, the isthmian railroad proved to be an instant financial windfall, with profits in the first 6 years of operation exceeding \$7 million. The railroad carried more than 400,000 passengers in its first 10 years.⁴

The success of the Panama Railroad explicitly demonstrated the demand for and value of a travel shortcut across the isthmus. American interests soon focused on the proposed utility and economic return a canal would provide, but the French—who purchased construction rights from Colombia in 1879—took the first initiative. Under French auspices in 1881, construction began on a sea-level canal across the narrowest part of the isthmus. By 1889 financial troubles, disease, and inadequate

machinery combined to force an end to the Compagnie Universelle du Canal Interocéanique de Panama.⁵

Panama's Political Development and Independence

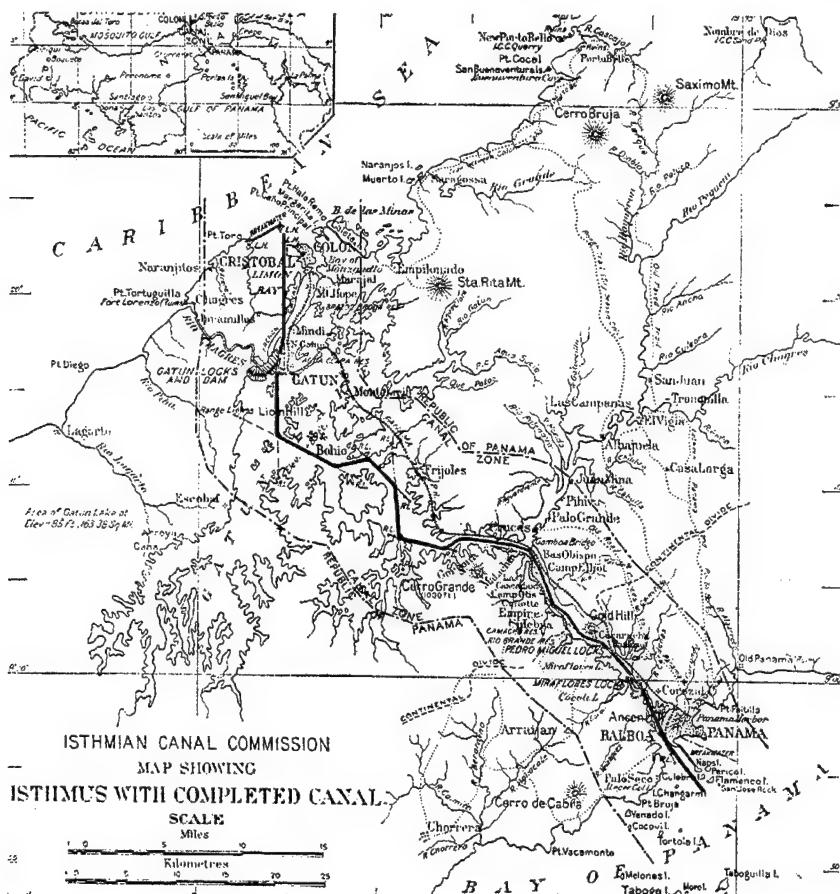
With the original French Panama Canal company out of the picture, U.S. interest in a canal sharply increased. The Compagnie Nouvelle du Canal de Panama, a reorganized version of the defunct company, agreed to sell its assets to the U.S. for \$40 million. However, Colombia refused to agree to the deal. This obstacle ultimately was removed when, on 3 November 1903, a group of prominent Panamanians led by Dr. Manuel Amador Guerrero declared Panama's independence from Colombia. A U.S. ship, the *Nashville*, along with U.S. military troops, intervened to protect the Panama Railroad. The result of this intervention was to prevent Colombian troops at Colon from capturing the revolutionary leaders at Panama City. Consequently, there was nothing to stop the revolution, and 3 days later the United States formally recognized the new Republic of Panama.

On 18 November 1903 the United States and Panama entered into the Hay-Bunau-Varilla Treaty, granting the United States "in perpetuity the use, occupation, and control" of a 10-mile wide strip of land across the isthmus to construct and defend a canal, with "all the rights, power and authority within the zone . . . which the United States would possess and exercise if it were the sovereign of the territory."⁸ The United States agreed to compensate Panama with the sum of \$10 million, plus an annuity of \$250,000 per year after canal completion. It is of considerable interest that no Panamanian citizen actually signed this treaty; the signatory parties were the U.S. Secretary of State John Hay and French diplomat Philippe Bunau-Varilla, the latter acting as an official agent for Panama in the treaty negotiations.⁹

The U.S. Builds a Canal

The French property on the isthmus was officially turned over to the United States on 19 May 1904. Colon and Panama City were located outside the Canal Zone [1.01]. Work on the monumental project began slowly through several hard years of disease and failure. Then William C. Gorgas was appointed Chief Sanitary Officer, and thanks to his efforts, the rampant populations of disease-carrying mosquitoes were controlled and reduced substantially. As disease among the labor force abated construction could begin in earnest, and by the end of 1906 the project employed almost 24,000 workers.¹⁰

As excavation got underway the engineers addressed final details of canal design. A dam for the Chagres River, nearly a mile and a half long and over 100 ft high, would be built at Gatun. The backed-up water, Gatun Lake, would rise to 85 ft above sea level. A ship would enter three locks built on the Atlantic side of the dam, elevate to the level of the lake, float 23 miles across the lake and 9 miles more along a channel blasted and scooped clear through the continental divide. At Pedro Miguel there would be a lock and small dam. The ship would be lowered 31 ft to a small lake, then pass through two locks at Miraflores and return to sea level on the Pacific side.¹¹



[1.01] Bird's-eye view of the canal and Canal Zone, from sea to sea.

The struggle to dig a channel through the continental divide took seven seemingly endless years [1.02]. The most difficult setbacks were the mudslides, particularly at Cucaracha on the east bank. This mammoth excavation, officially designated as the Culebra Cut, was known to the men who created it as "Hell's Gorge." Work on the locks began in 1909 and took about 4 years. The lock chambers were built of concrete, and the lock gates were steel. The lock walls were 1000 ft long, 110 ft wide, and 80 ft high. Six pairs of chambers were built (to handle two lanes of traffic). Each set of locks was operated through a central control board.¹²

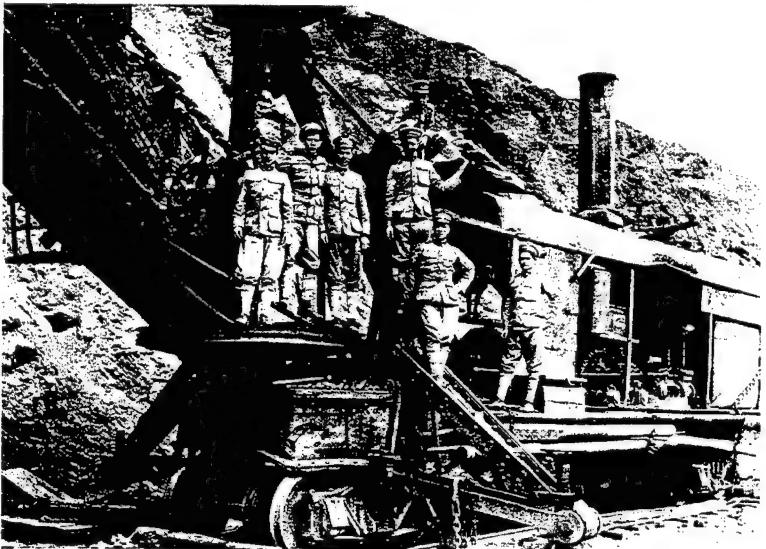
By the summer of 1913 the locks and the Culebra Cut were finished. On 26 September 1913 water was first released into the locks. In 1914 President Woodrow Wilson named Chief Engineer George Washington Goethals as the first Governor of The Panama Canal.¹³ The canal administration was a civilian agency but the position of Governor was always filled with a military officer from the Army Corps of Engineers. On 15 August 1914 the canal officially became operational when the ship *Ancon* successfully completed a transit between the oceans [1.03].¹⁴

Origins of the U.S. Role in Panama Canal Defense

Defense-Related Treaty Provisions

The Hay-Paiceforte and Hay-Bunau-Varilla treaties implied but did not explicitly grant the United States the right to fortify the Canal Zone.¹⁵ Central to the U.S. deci-

[1.02] Soldiers on steam shovel in Culebra Cut.



YEARS THE PANAMA CANAL

Since Aug. 15, 1914, vessels have been passing through this big ditch that cuts a continent in twain, immensely increases the striking power of our navy, and is a permanent monument to America's mechanical genius

By Russell H. Reeves

THREE years ago today the Panama Canal was opened to the world. At that time it was the largest engineering project ever undertaken by man. It has since become the most important waterway in the world. The opening of the canal has had a profound influence on world affairs. It has made possible the rapid transport of men and supplies to distant lands. It has also made possible the rapid movement of ships from one side of the continent to the other. The opening of the canal has also made possible the rapid movement of ships from one side of the continent to the other.



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The submarine, submarine chaser, gun boat, which form the submarine fleet. The two newest vessels in the team are shown on the bottom of the page. The photograph was taken

[1.03] 'Uncle Sam' at the Panama Canal, illustrated in a commemorative article on the 20th anniversary of the opening of the Panama Canal.

sion to fortify the canal was Article Three of the Hay-Bunau-Varilla treaty, which gave the United States all powers, rights, and authority in the Canal Zone. The issue of canal fortification was debated until 1911, when the House of Representatives appropriated \$2 million for that purpose. The following year Congress added \$1 million for gun and mortar batteries and \$200,000 for land defenses. Construction of fortifications began on 7 August 1911 under Sydney Williamson, Goethals' Chief of the Pacific Division. On 1 January 1912, Goethals' son, Lieutenant George R. Goethals, was put in charge of the fortification project.

Large forts with gun batteries were to be built at each end of the canal, with field-work for 6000 mobile force troops (infantry, cavalry, engineer, signal, and field artillery) in between. The work of The Panama Canal staff increased significantly

with the 1915 military appropriation of \$1.29 million and the subsequent assignment of Army barracks and quarters construction. All design and construction work for Army post buildings was assigned to The Panama Canal since they had a great deal of experience building facilities during the initial canal construction effort. Much of the early military construction undertaken by The Panama Canal for the Army made use of existing designs and building material specifications. By June 1915 almost \$15 million had been spent on fortifying the canal, including the locks and dams. Military reservations were officially established on 18 September 1917, designated as Fort Grant, Fort Amador, Fort Sherman, Fort Randolph, and Fort de Lesseps.¹⁶

Early U.S. Military Missions in Panama

The first U.S. troops had arrived on the isthmus long before the construction of permanent military installations. As previously noted, in 1903 a detachment of U.S. Marines kept the Panama Railroad open during the Panamanian revolution for independence. Two companies of Marines under the command of Major John A. Lejuene made camp in the canal construction town of Empire. By January 1904 two reinforcing Marine battalions arrived on the isthmus. The Marines were consolidated at a location designated Camp Elliott, at the construction town of Bas Obispo. For the next 10 years the Marines stationed there provided security for the canal construction effort. The Marines remained until January 1914 when their role was reassigned to the Army. In 1923 the Marines returned to Panama as a continual presence with the establishment of the Marine Barracks at Coco Solo.¹⁷

Permanent Troops Arrive

Infantry would be central to the strategy and tactics of canal defense, in large part due to the lock-based design of the canal. Because the locks were critical points in the transit, protecting them was a high-priority military concern. As one infantry colonel wrote in a 1925 military journal article, "It is correct to say that the mission of the Infantry in the Canal Zone is primarily to protect the canal locks and their essential accessories against hostile raids by land forces."¹⁸

The first permanent Army troops in Panama (the 10th Infantry) arrived on 4 October 1911 and set up a camp called E. S. Otis, using some old barracks originally built for the ill-fated French canal project. The 5th Infantry joined the regiment on 25 November 1914 and moved into old canal buildings in the town of Empire. The force expanded again on 15 March 1915 when the 29th Infantry arrived and encamped in the former construction town of Culebra.¹⁹ Reorganization on 1 July 1916 resulted in the creation of the 33rd Infantry from elements of the 5th and 10th Infantries. Members of the 33rd Infantry took up their station in old canal buildings at Gatun, on the Atlantic side of the canal.²⁰

Guarding the approaches to the canal was the primary mission of the Coast Artillery Corps, whose forts at both ends of the canal were armed with the largest guns available. When the coastal batteries were sufficiently completed, Coast Artillery troops began to arrive on the isthmus. The first group to land, the 81st Company, arrived on 22 December 1913 and proceeded to their camp, the future site of

"Pay was about \$15 a month for a private; a sergeant got about \$30 and the first sergeant got \$40 or \$45 . . . Each man would be paid, and then he would go through the pay line for company collections. He had to pay the barber, the man who did the laundry, and pay his bill at the exchange. Each company usually had a pool table, also, and collection was made for its maintenance in the pay line. Rations cost about 30 cents a day, and if I had to eat a meal in the company it cost me about 10 cents . . . the men used to contribute about one dollar a month in the pay line to increase the rations in the mess hall. The cooks would go out and buy items that weren't usually scheduled on the menu."

Major General Franklin Sibert²¹

Fort Amador. During the next year, the 199th, 44th, 21st, 45th, and 144th Companies joined the Coast Artillery Corps. In 1915 these forces were supplemented by the 16th, 116th, and 40th Companies. By May 1916, the Coast Artillery was completed with the arrival of the 8th, 15th, 73rd, 87th, and 124th Companies. Within a few years, these artillery troops were all in permanent quarters at Fort Amador on the Pacific side and Forts Sherman, Randolph, and De Lesseps on the Atlantic. Reorganization in July 1924 resulted in these units being assigned to either the 1st, 2nd, 4th, or 65th Coast Artillery Regiment.²²

Various other troops arrived during this time period to augment the infantry and artillery personnel on the isthmus. The 1st squadron of the 12th Cavalry arrived in March 1915 and remained until 1921 when the Army was reorganized. Also in March 1915, a platoon of signal corps troops arrived. The first engineer unit assigned to the garrison arrived in May of the same year. Company M, 3rd Battalion of Engineers soon began the first military survey of the area. They became part of the 11th Engineers in November 1920. Field artillery troops were the next to arrive when the 2nd Battalion, 4th Field Artillery landed in March 1916. The field artillery troops were tasked with supporting the infantry in the Canal Zone. One year later a fledgling Army Air Corps presence was established with the arrival of the 7th Aero Squadron, whose mission was to provide aerial reconnaissance capabilities in cooperation with Navy and Coast Artillery forces in the Canal Zone.²³

Impact of U.S. Defense Buildup and World War I

The buildup of U.S. troops on the isthmus required new organizations for more effective administration of the garrison. A consolidated command called United States Troops, Panama Canal Zone was established on 6 January 1915 under

Brigadier General C. R. Edwards, as part of the Eastern Department of the U.S. Army. The troop buildup had increased the military strength in the Canal Zone to approximately 5000 when the United States entered World War I on 6 April 1917. President Wilson, in an Executive Order dated 9 April 1917, transferred authority over the Panama Canal and the Canal Zone from the Canal Zone Governor to General Edwards. A Presidential Proclamation was used to declare the ‘neutrality’ of the canal on 23 May 1917. This order restricted the ability of all military and military support ships (except those flying the U.S. flag) to stop during canal transit for receiving supplies or fuel, or to unload troops or ammunition. This proclamation also regulated use of docking and repair facilities, length of stay in the area, use of radios aboard ship, and use of air space by planes. Enemy ships could continue to use the canal, but they were required to get permission from the canal authorities.²⁴

During World War I canal defense remained among the highest priority concerns of U.S. military leaders. The need to rapidly move troops, military ships, and supplies remained critical, and the sabotage or destruction of a lock (rather than wholesale capture of the canal) was considered the worst-case scenario:

The extreme improbability of an enemy being able to capture the canal intact and of being able to hold it and use it, made it practically certain that the objective of hostile operations in the Panama Area, at least during the early period of a war, would be the damage [or] destruction of the canal rather than the occupation of the Canal Zone.²⁵

To guard against this likely enemy strategy it was necessary to block attacks by sea, land, and air. Since this had been the military mission in Panama all along the troops necessary to provide this security were already in place.

The possibility of sabotage by enemy agents was considered a real threat, and direct initiative was taken to alleviate the danger. Ships were checked before transit through the canal, and any German nationals on board—both passengers and crew—were removed. They were transported under guard by rail to the other terminus where they reboarded. All German subjects living in the Canal Zone or the Republic of Panama were identified and watched.²⁶

Due to the wartime demands for troops a number of units were transferred out of the Panama garrison. Between May 1917 and October 1918 the 10th, 5th, and 29th Infantries returned to the United States. A regiment of the Puerto Rican Infantry arrived in May 1917 to replace the 10th Infantry, and was quartered at Camp Gaillard.

The demands of wartime also resulted in more administrative changes for the Army. On 1 July 1917 a separate geographical department—the Panama Canal Department of the United States Army—was created. Its first commander was Brigadier General Adelbert Cronkhite.²⁷

As the war progressed it became clear that U.S. forces in Panama were not going to be actively involved in combat. No large-scale transits of U.S. or Allied fleets occurred, and the canal was never in danger of an attack in force. The Panama Canal remained secure and peaceful. President Wilson returned control of the canal to the Governor, The Panama Canal by Executive Order No. 3032 on 25 January 1919.

“I am fortunate in being able to report that the Canal was operated and maintained during the period of the war without mishap or delay to vessels using its facilities; that no acts of injury or destruction were committed against the Canal or any of its structures.”

Chester Harding, Governor of The Panama Canal²⁸

Notes for Chapter 1

- 1 Hugh Gordon Miller, *The Isthmian Highway: A Review of the Problems of the Caribbean* (New York: MacMillan Co., 1929), 7; John O. Collins, *The Panama Guide* (Mount Hope, CZ: I.C.C. Press, 1912), 57.
- 2 John and Mavis Biesanz, *The People of Panama* (New York: Columbia University Press, 1955), 25; Suzanne Johnson, *An American Legacy in Panama: A Brief History of the Department of Defense Installations and Properties, the Former Canal Zone, Republic of Panama* (Corozal, Panama: Directorate of Engineering and Housing, United States Army Garrison-Panama, 1995), 5; Miller, *The Isthmian Highway*, 7; Collins, *The Panama Guide*, 57.
- 3 David McCullough, *The Path Between the Seas: The Creation of the Panama Canal, 1870–1914* (New York: Simon and Schuster, 1977), 28–30; Miles P. DuVal, *Cadiz to Cathay: The Story of the Long Struggle for a Waterway Across the American Isthmus* (Stanford, CA: Stanford University Press, 1940), 21–23.
- 4 McCullough, *Path Between the Seas*, 34–36.
- 5 McCullough, *Path Between the Seas*, 44, 235; Johnson, *American Legacy in Panama*, 7.
- 6 Kirkpatrick, R.Z., “General Grant in Panama,” *The Military Engineer*, vol XXVI, no. 146; McCullough, *Path Between the Seas*, 37–38.
- 7 “Speech for 1997 Army Birthday Ball” authored by Stuart G. R. Warner, Archivist, U.S. Army South (USARSO), Fort Clayton. The text was intended for presentation by BG Philip R. Kensinger, Jr., Commanding General, USARSO, on 14 June 1997.
- 8 DuVal, *Cadiz to Cathay*, 124, 130–131, 138–140, 333–340, 482–492; McCullough, *Path Between the Seas*, 341–342, 371–377; U.S. Senate, *A Chronology of Events Relating to the Panama Canal: Prepared for the Committee on Foreign Relations* (Washington, DC: GPO, 1977), 3; Joseph Bucklin Bishop and Farnham Bishop, *Goethals: Genius of the Panama Canal* (New York and London: Harper and Brothers Publishers, 1930), 117–119.
- 9 Johnson, *American Legacy in Panama*, 9.
- 10 Bishop and Bishop, *Goethals*, 125–128; McCullough, *Path Between the Seas*, 448, 457–473, 480.
- 11 McCullough, *Path Between the Seas*, 483–489.
- 12 Ibid., 549–554; Bishop and Bishop, *Goethals*, 207–209.
- 13 The federal agency responsible for construction of the canal was the Isthmian Canal Commission. Upon completion of the canal, this agency was disbanded on 1 April 1914. A successor organization named The Panama Canal was created to operate and maintain the canal and administer the Canal Zone. In 1951 this agency was reorganized as the Panama Canal Company and assigned responsibility for Canal operations; at this time an associated Canal Zone Government also was established for administering the Canal Zone. These agencies remained in place until the Panama Canal Treaty of 1977. Upon treaty implementation on 1 October 1979, the Panama Canal Company/Canal Zone Government was disestablished and replaced by the Panama Canal Commission, a joint U.S.–Panamanian agency primarily concerned with canal operations. This administrative body remained in place until transfer of the canal to the Republic of Panama on 31 December 1999. At that time, control transferred to Panama under the newly established Panama Canal Authority.
- 14 McCullough, *Path Between the Seas*, 594–599, 604–609; Bishop and Bishop, *Goethals*, 260–264; Herbert Knapp and Mary Knapp, *Red, White, and Blue Paradise: The American Canal Zone in Panama* (San Diego, CA: Harcourt Brace Jovanovich, Publishers, 1984), 124; Gerstle Mack, *The Land Divided: A History of the Panama Canal and Other Isthmian Canal Projects* (New York: Alfred A. Knopf, 1944), 513; U.S. Senate, *Chronology*, 5.
- 15 The Hay–Paunceforte Treaty settled a diplomatic dispute with Great Britain over Isthmian territory. Secretary of State John Hay and British Ambassador Sir Julian Paunceforte signed a treaty on 18 November 1901, that gave the U.S. the right to construct, own, operate, defend, and govern a canal.
- 16 Logan Marshall, *The Story of the Panama Canal* (New York: L.T. Myers, 1913), 202–203; Bishop and Bishop, *Goethals*, 132, 221; Mack, *The Land Divided*, 512–513; Frederic J. Haskin, *The Panama Canal* (Garden City, NY: Doubleday, Page & Company, 1913), 283–284; The Panama Canal, *Annual Report of the Governor of the Panama Canal for the Fiscal Year Ended June 30, 1915*, (Washington, DC: GPO, 1915), 31–32; George M. Wells, Resident Engineer, The Panama Canal to Governor, The Panama Canal, 27 January 1916, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 2, National Archives and Records Administration, College Park, MD.
- 17 Captain J.H. Reynold, “Marines in Panama: 1856–1976,” *Marine Corps Gazette* (October 1976), 31–33.
- 18 Colonel Charles R. Howland, “The Infantry in the Canal Zone,” *Infantry Journal* 26 (April 1925), 382.
- 19 The 29th Infantry camp at Culebra was renamed Camp Gaillard in honor of Lieutenant Colonel David Gaillard, the man in charge of excavating the Culebra Cut.
- 20 John R. Baldwin, “History of the Panama Canal Department,” *Infantry Journal* 26 (April 1925), 365–368.
- 21 “Retired Major General Recalls Former Days in Canal Zone,” *Southern Command News*, 5 December 1969, 10.
- 22 Ibid., 365–367; Colonel John T. Geary, “The Coast Artillery in Panama,” *Infantry Journal* 26 (April 1925), 395.
- 23 Ibid., 366–367; Captain T.S. Voss, “The Army Air Service,” *Infantry Journal* 26 (April 1925), 417.
- 24 “The Army and Navy: The military and naval activities on the Canal Zone are important elements of the canal enterprise,” in *Panama Canal: Twenty-Fifth Anniversary, 1914–1939* (Mount Hope, CZ: The Panama Canal Press, 1939), 93–94; Dolores De Mena, “History of the United States Army in the Panama Canal Area,” Unpublished manuscript (Fort Clayton, Panama, USARSO History Office, 1994), 4; *Canal Record*, 13 June 1917, 515; The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1917* (Washington, DC: GPO, 1917), 411–412.
- 25 “War Plans and Defense Measures” (n.p., circa 1948), USARSO History Office files, National Archives and Records Administration, College Park, MD, 5.
- 26 *Canal Record*, 12 February 1919, 291–293.
- 27 “The Army and Navy,” 94; Baldwin, “History of the Panama Canal Department,” 367–368; De Mena, “History of the United States Army,” 4.
- 28 *Canal Record*, 12 February 1919, 293.

CHAPTER 2

Standing Up Fort Clayton (1917–1922)

Protecting the Miraflores Locks

Fort Clayton was built on the Pacific side of the Panama Canal, on a site adjacent to the Miraflores Locks and near Miraflores Lake and the Pedro Miguel Locks. During canal construction the area that would become Fort Clayton originally served as a repository (dump) for some of the huge volumes of material excavated from the isthmus. Enough material (or “spoil”) was deposited at the Balboa Dump near the Pacific entrance to create a causeway linking several islands to the mainland. This engineered landform provided the future sites for Forts Amador and Grant. Material excavated from a little farther inland was deposited near the Miraflores Locks. This site, the Miraflores Dump, was put to use by U.S. forces as early as 24 April 1914 when a security presence was established for Miraflores. One company of soldiers from the 10th Infantry established a camp on the future site of Fort Clayton and provided security for the locks through guards and mobile patrols. The site was soon abandoned, however, due to the advent of the rainy season and the distance from the camp to the locks; the patrol moved its camp to the east lock wall at Miraflores [2.01, 2.02].¹

Canal Defense Plans and the Cronkhite Board

Beginning in 1915, a series of efforts began to develop a coordinated plan for canal defense, including the construction of permanent Army posts in the Canal Zone. In 1916 a Board of Officers convened to develop recommendations for the siting of

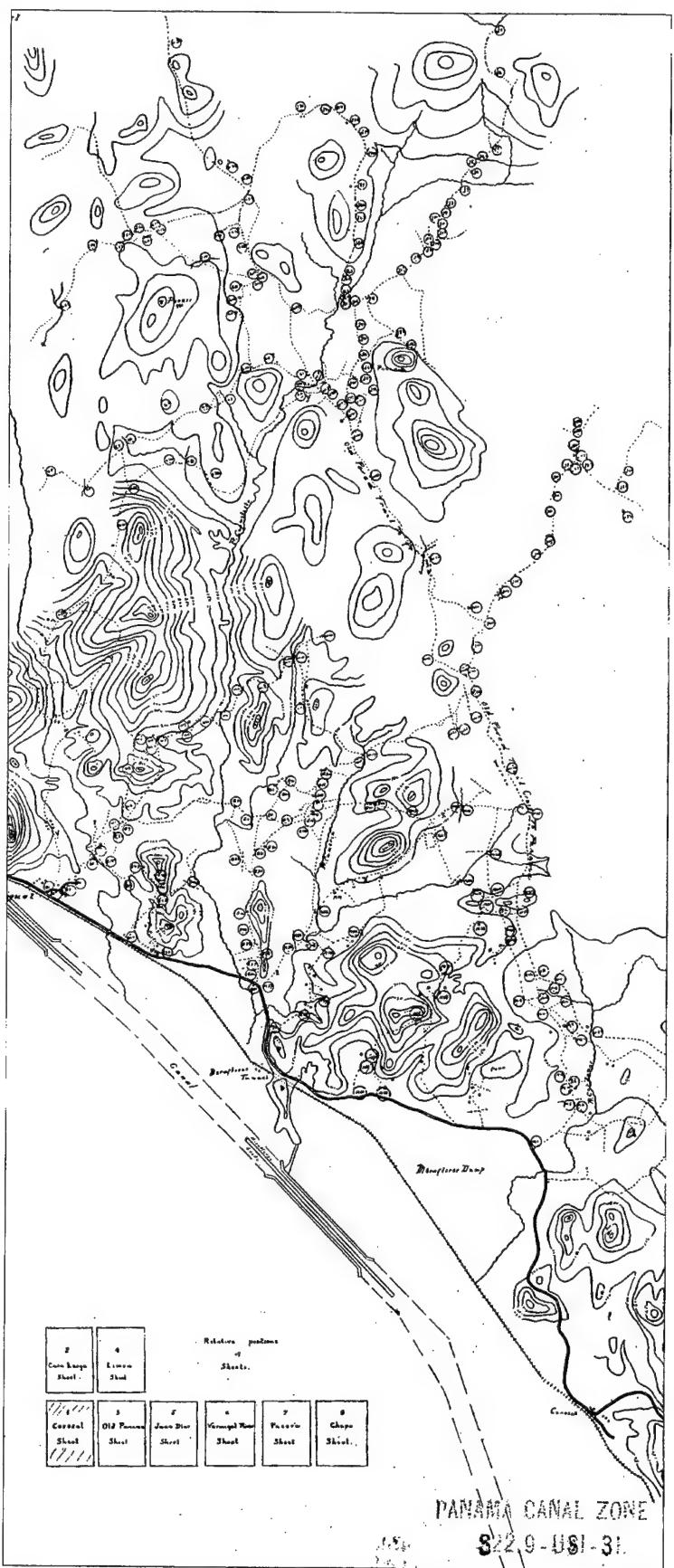
[2.01] The Miraflores dump area, future site of Fort Clayton.



installations, including construction cost estimates. This board's report, issued early in 1917, was harshly criticized by higher headquarters because the troops would be too dispersed, and this approach would raise construction costs to an unacceptable level. Another problem was that the 1916 board recommended the use of frame buildings, which are difficult and expensive to maintain in the tropics. The board's findings were rejected and it was decided to convene a different Board of Officers to provide a second analysis.

The new Board of Officers convened in June 1917 and, like the previous board, it was tasked to recommend post locations and the type and character of buildings required. The new board was headed by Brigadier General Adelbert Cronkhite, soon to be named commander of the new Panama Canal Department of the U.S. Army. The board comprised representatives from infantry, cavalry, field artillery, and the engineer and medical corps. In their report, dated 28 August 1917, the Cronkhite Board recommended placing one brigade of infantry at Gatun, with all other mobile force troops on the Pacific side. The board recommended placing one infantry brigade at Miraflores Dump, another adjacent to the Curundu River, and one artillery brigade and one cavalry regiment south of Diablo Ridge. Corozal was the location recommended for the sanitary troops, the signal corps troops, and the engineer regiment, as well as for the main supply depot site. Quarry Heights, built on the site of the former Ancon Quarry, would serve as the Army's department and division headquarters in Panama. The Cronkhite Board also recommended post layouts and specific building construction details. Many of this board's recommendations for Fort Clayton—including location at Miraflores Dump—were subsequently adopted.²

By 1917 military officials had expressed the need to formally acquire land for defense purposes, and engineers in the Panama Canal Department (PCD) surveyed all parcels considered necessary. The resulting list was submitted to the War Department on 27 April 1918, and the Commanding General of the Panama Canal Department was granted permission to begin acquisitions on 3 June 1918. As the parcels of land were acquired, they were officially designated as U.S. military reservations through a series of Executive Orders by Woodrow Wilson. The Curundu Military Reservation, which would encompass Fort Clayton, the Panama



[2.02] Surveyed and drawn by the 10th U.S. Infantry in 1913, this map shows the future site of Fort Clayton as "Miraflores Dump" (near bottom right).

Arsenal, the Engineer Depot, and the Post of Corozal, was formally established by Executive Order No. 3207, signed by President Wilson on 30 December 1919 [2.03, 2.04].³

Colonel Clayton is Honored

General Order 91, dated 19 July 1919, named the new Army post at Miraflores Dump in honor of the late Colonel Bertram T. Clayton [2.05]. Colonel Clayton had served as Quartermaster of the Canal Zone military forces from 1914–1917. A graduate of the U.S. Military Academy, Colonel Clayton served as a member of a 1915 defense board tasked with formulating plans for defending the canal. As such, he contributed to the creation of the Army installation that would bear his name. Colonel Clayton was killed in action in France on 30 May 1918.⁴

On 31 May 1968 a memorial plaque rededicating the post in honor of Colonel Bertram Clayton was unveiled on the canal side of Building 95. Funding for the memorial was made possible through contributions of the Fort Clayton Officers' Wives and the Noncommissioned Officers' Wives Clubs.⁵ Designed by Army Specialist P.T. Kelley, the plaque in part reads: "Killed in France by an enemy shell, after a life distinguished by outstanding military and civil contributions."⁶

Site Geography and Landforms

The land set aside for Fort Clayton included landforms engineered from spoil excavated during construction of the Miraflores and Pedro Miguel locks as well as the canal itself. The western edge of the post area consisted of a broad, flat plain that overlooked Miraflores Locks further to the west. Approximately 20 ft of fill dirt was deposited over the natural surface of the area, and it was graded with attention to the drainage requirements of a rainy tropical climate. The land rose up from the edge of the canal in a moderate slope to an elevation of approximately 60 ft at the edge of the fill area. The plain rose slightly to the north and northeast—an elevation increase of approximately 30 ft in a little more than half a mile. The site had excellent characteristics for siting a fort, and the engineers and architects took good advantage of them. For the first 20 years of Fort



[2.03] Fill has been completed, 1919, and construction of Fort Clayton is set to begin.

I'm on my way, I'll say I am,
To PANAMA.
Where old "Jack Frost" has lost
his sting.
Where H. C. L. means not a thing.
With Uncle Sam I'll have a fling,
In PANAMA.
The Army says it wants some men,
In PANAMA.
I've been through France and on the Rhine.
I was back in cits and feeling fine.
But the good old Army life for mine,
In PANAMA.
They are hunting, fishing and swimming now,
In PANAMA.
And a soldiers life with your Uncle Sam,
Is the outdoor life, where a mans a man.
So I'm on my way, I'll say I am,
To PANAMA.

**A LIMITED NUMBER OF MEN
CAN NOW JOIN FOR
SERVICE IN**

Infantry, Cavalry, Coast Artillery, Engineer Corps, Signal Corps, Medical Department, Ordnance Department and Quartermaster Corps.

ON DUTY IN THE PANAMA CANAL DEPARTMENT.

JOIN TO-DAY
at
NEAREST ARMY RECRUITING STATION.

[2.04] Panama Canal Department, Army Enlistment Poster.

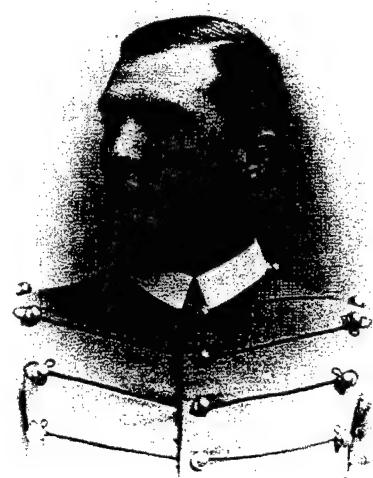
Clayton's history this site would comprise the entire built area of the reservation. Beyond this flat plain the terrain included numerous hills and valleys that had been etched out of the land at different rates of erosion. At their highest elevation these hills rose approximately 400 ft above sea level.

About a mile north-northeast of the original post construction site was the junction of the Guanabano and Cardenas Rivers. To the south of that point the Cardenas River defined the southern edge of the property, and has been partially channelized over the years [2.06]. The fairly steep drop in elevation into the river valley, and the gradual rise on the other side (to approximately 150 ft) constitute the major topographic feature in the original built-up area of Fort Clayton.

Natural vegetation on Fort Clayton was predominately semi-deciduous seasonal forest, with some grasslands and shrub lands. The forest vegetation was dense and luxuriant, and like all vegetation in the tropics, it grew very rapidly [2.07]. The built-up areas of the post displayed landscape material planted for aesthetic purposes, including many varieties of flowering plants such as hibiscus, bougainvillea, and orchids. Americans stationed in Panama saw the native flora, along with species introduced by previous immigrants, to be dramatic and exotic. In this climate and setting it was natural that gardening became a popular pastime; the homes in the officer's quarters areas of the post were surrounded with naturalistic planting arrangements. The main streets of the post were lined with mature palm trees, and these also were planted in other areas to provide shade for outdoor activities. A large, open recreation area, Clayton Community Park, provided a landscape focal point for the installation.⁷

Tradition and Innovation in Post Design

The Cronkhite Board's general plan for the infantry post at Miraflores Dump called for three large battalion barracks on three sides of a square or trapezoid, with the administration building centered on the fourth side. The buildings would face



[2.05] Colonel Bertram T. Clayton.



[2.06] Rio Cardenas Bridge.



[2.07] Native tropical vegetation still thrives along this road at Gun Hill.

Tropical Flora and Military Discipline

At least one plant indigenous to the Canal Zone presented a challenge for military discipline at Fort Clayton and elsewhere during the early years. Marijuana, or *cannabis sativa*, grows wild throughout Panama and also is cultivated in many areas. Because cultivation and sale of marijuana was not illegal in Panama during the early decades of the 20th century, some percentage of soldiers had smoked it from the earliest days of U.S. military presence on the isthmus.

Medical and popular opinion during the 1910s and 1920s largely held that the drug posed no long-term addiction problems. Army commanders, however, repeatedly complained to their superiors that marijuana use made their troops "incorrigible and unmanageable" when they were under its influence.⁸ By 1923 the PCD Commanding General was convinced there might be some substance to these complaints and issued a circular designating the use and possession of marijuana as a punishable military offense. The Republic of Panama, acting upon U.S. Army pressure, passed a law that year making marijuana sale and use punishable by a maximum of 1 year in prison.

But in 1926 the Governor of the Canal Zone named a committee to investigate the use of marijuana and submit recommendations. Based on one session observing four policemen smoke marijuana leaves, this committee reported "the influence of the drug when used for smoking is uncertain and appears to have been greatly exaggerated . . . [T]here is no medical evidence that it causes insanity."⁹ The

committee concluded there was no evidence that marijuana was a habit-forming drug and recommended against preventing its sale or use. Consequently, the military penalties for possession and use were dropped.

In spite of the findings of the governor's board, Army commanders continued to press for solutions to military discipline problems arising from the rapidly growing numbers of troops smoking marijuana. In 1928 the PCD Commander ordered further study of the problem. A year-long study ensued in which all soldiers suspected of marijuana intoxication were referred to the PCD Surgeon for medical investigation. This study produced findings similar to the 1926 investigation; once again it was recommended by the investigating body that no steps be taken to restrict its use. On 1 December 1930, however, 1 week after a change of command, a General Order was issued forbidding military personnel from using marijuana.¹⁰

But Army officers continued to complain about the impact of marijuana use on military discipline. According to one estimate from this period, 20 percent of Fort Clayton troops were using marijuana; Fort Davis ranked second, with 5 percent of its troops involved. So once again, this time in May 1931, the Commanding General asked the Governor of the Canal Zone (i.e., the civilian authority) to reinvestigate the problem of marijuana use by U.S. troops. A new committee, consisting of both military medical personnel and civilian medical staff from Gorgas Hospital,

was established to conduct the investigation. This effort included dedicated scientific studies using marijuana grown and harvested under controlled conditions in the Panama Canal Experiment Gardens and observations of soldier volunteers using marijuana. The findings of this investigation were much broader than earlier findings. It was concluded that marijuana smoking was common among soldiers, but that the drug was not addictive. The committee identified no mental or physical deterioration attributable to smoking marijuana. However, it was concluded (based on common medical knowledge and practice) that the habitual use of any stimulant or intoxicant was detrimental to a person's health. Therefore, this panel recommended keeping the military restrictions against marijuana in force. At the same time, however, the panel expressed the opinion that commanders had overemphasized the effects of marijuana in the creation of delinquent soldiers, stating that "a large proportion of the delinquents are morons and psychopaths which conditions of themselves would serve to account for delinquency."¹¹

No further action was taken by the civilian Canal Zone government to ban marijuana, and many soldiers continued to use it in violation of military restrictions. This situation persisted with little change until 1942, at which time the civilian government finally outlawed the production and sale of marijuana in the Canal Zone.¹²

inward and have roads in back. At both Forts Clayton and Davis the actual construction followed the board's recommendations, and initially both posts were identical. In compliance with a request made in 1919 by the Commanding General of the Panama Canal Department, the construction of "various little buildings"¹³ was kept to a minimum, and large barracks were to be used wherever possible. This approach created a more compact post with fewer buildings, thereby reducing the cost of utility service. The consolidation of all administrative functions in one regimental headquarters building was also recommended as a cost-saving measure.¹⁴

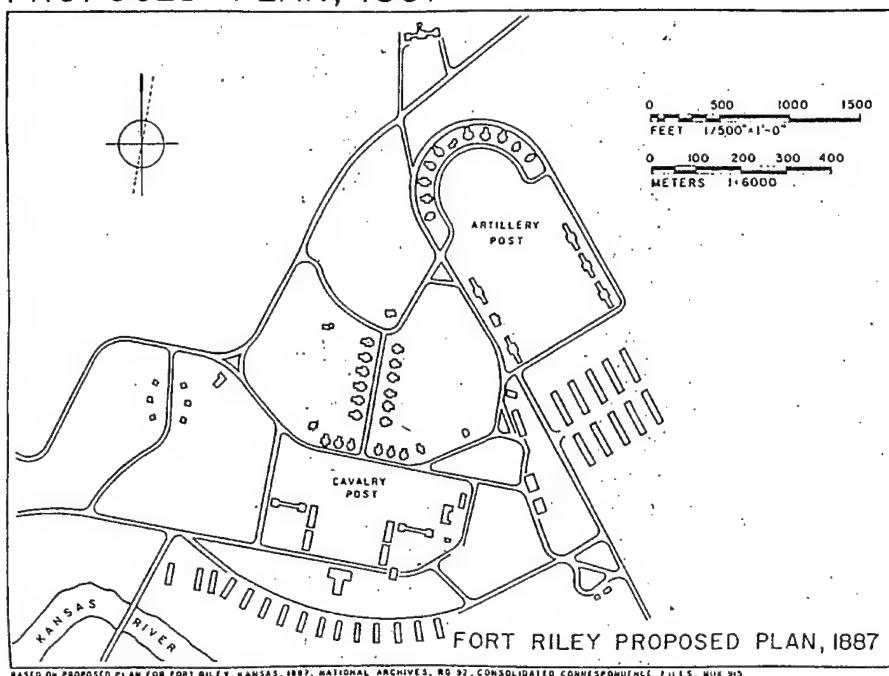
The initial design for Fort Clayton reflected a combination of past military tradition, contemporary trends in urban planning, and the prevalent general building design used by the Isthmian Canal Commission/The Panama Canal (see cover photo). The use of barracks, officers' quarters, and administrative facilities to enclose a parade ground is reminiscent of a pre-Civil War military post design concept, as is the prominence of the parade ground as the post's central feature. It was after the Civil War, when Army posts were realigned and consolidated, that the concept of open-ended parade grounds came into favor in order to better accommodate future expansion.

In Fort Clayton's original layout military tradition also was apparent in the arrangement of certain elements that reflected the military hierarchy. The headquarters building was sited at the top of the barracks rectangle, demonstrating the dominance of the command facility. The top central point of the officers' housing area was reserved for the Commanding Officer's quarters—the only single-family dwelling included in the original plan. Two-family field officers' quarters were built next door on both sides. Across the street were the two-family captains' quarters. The ends of the street were occupied by four-family lieutenants' quarters. The housing for noncommissioned officers (NCOs) was built at the opposite end of the post.

Several aspects of Fort Clayton's overall design, however, reflected more modern concepts of land-use planning that had emerged in an 1890s renovation of Fort Riley, Kansas. While the Fort Riley artillery post presented the traditional quadrangle and parade field, this configuration removed the officers' quarters from the actual quadrangle and placed them along a curving arc 'on top' of the other buildings. The Fort Riley renovation was designed by Captain George E. Pond, with the assistance of architect William Goding. Pond designed an installation with both cavalry and artillery posts, and this artillery post design strongly foreshadowed layout concepts used later at Fort Clayton [2.08]. The Fort Riley artillery post is largely rectangular, with barracks and an administration building flanking a parade field. At the top of the post layout is a semicircle containing officers' quarters. Very similar design elements were incorporated into the Fort Clayton layout.

The use of a curved road for a residential area reflected suburban design ideals then emerging in the United States as well as urban planning choices made for the permanent towns that had recently been built in the Canal Zone. The plans for those Canal Zone communities had been influenced and partially executed by a group of renowned civilian architects and landscape architects retained by Colonel Goethals' to ensure that "U.S. citizens living in the Panama Canal Zone should live

PROPOSED PLAN, 1887



[2.08] Proposed plan for Fort Riley, Kansas (1887), showing similarities between artillery post layout and initial layout of Fort Clayton.

in beautiful communities—communities that would contribute to the quality of life for their residents.”¹⁵ The influence of Colonel Goethals’ ‘beautiful communities’ of civilian architecture spurred the introduction of more sophisticated building designs on military installations as well.

Tropical Facility Design and Functionality

Adaptations for Excessive Rain and Humidity

In the 1890s the Army had begun developing a system of standardized construction for many different types of buildings, including administrative facilities, barracks, and family housing. This trend toward standardization, which was intended to control construction costs and improve living standards, provided a route for incorporating improved building design into standard construction practice on Army installations, including those located in the Canal Zone.¹⁶

The initial construction at Fort Clayton was based on Army-standard building plans, but local conditions required these plans to be modified to varying degrees. The Building Division of The Panama Canal engineered the modifications. The most pressing problem to address was complications created by the very high tropical humidity. Daytime temperatures are usually in the 80s, and do not fall below 70 at night. This temperature range remains constant throughout the year; seasonality is indicated by precipitation patterns. The dry season in Panama runs from January through April, and is characterized by strong sun, clear skies, and quickening breezes. The rainy season begins in May and runs through December, during which periods of sunshine alternate with periods of clouds and rain. It rains almost every day during the rainy season, and the rainfall can be torrential. In general, wood and metal were used mainly as temporary building materials because they deteriorate

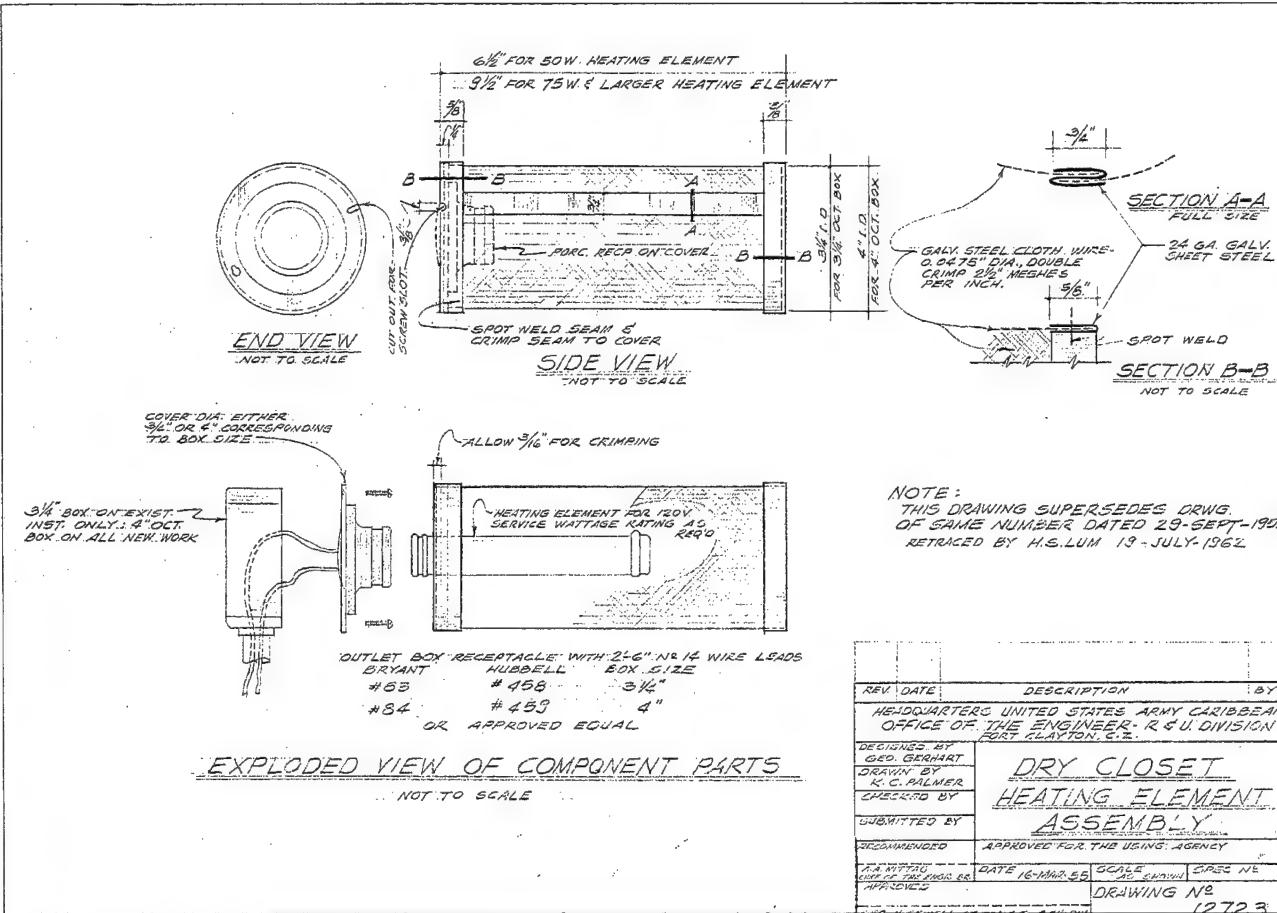
rapidly due to the stresses of heat and dampness. Wood rots easily and is vulnerable to attack from insects; steel is subject to rapid corrosion. Concrete proved to be the most practical and impervious building material for the tropical environment, and it was used widely both in the form of poured, reinforced concrete and as concrete block. It was recommended as the preferred building material by the Cronkhite Board in 1917.

The buildings at Fort Clayton were designed to be “of a uniform type of construction and [to] embody features, consistent with economy, that past experience has taught the climate required for permanency and for comfort.”¹⁷ The basic architectural features of the original buildings were skeleton frames (columns and beams) of reinforced concrete with exterior walls of hollow concrete block stuccoed on the outside and lime-plastered on the inside. Roofs were clad with Spanish tile over wooden frames. The first-floor elevations were uniformly 4 ft above grade, and the buildings typically included generous porches with concrete floors, copper screens, and tile hoods over otherwise unsheltered barracks windows.¹⁸

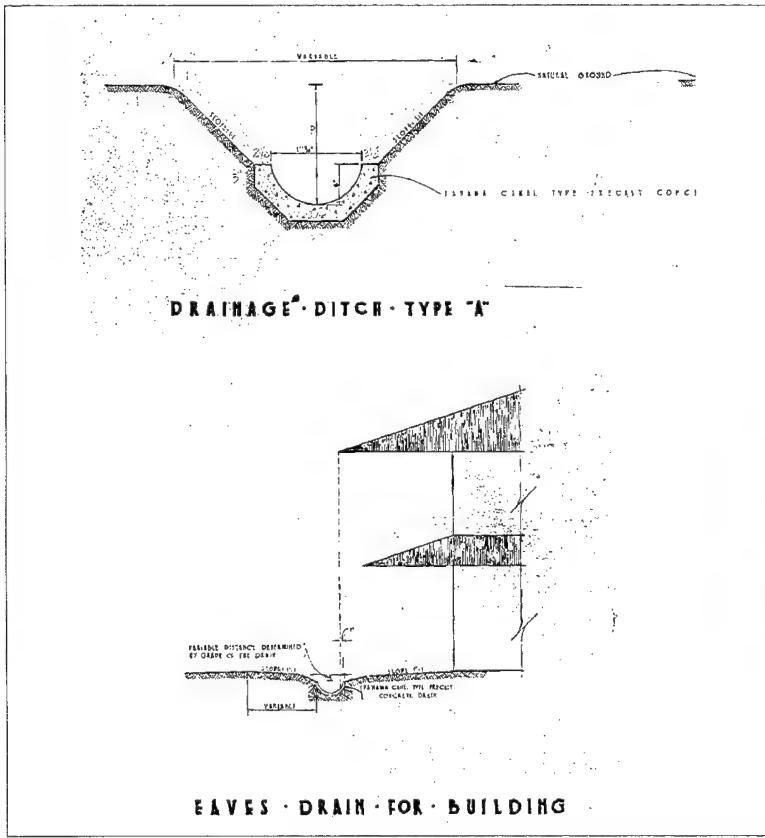
The most obvious external architectural adaptation to Panama’s frequent torrential rains was broad, overhanging eaves designed to keep rain off the exterior walls as much as possible. Another adaptation was the red clay Spanish tile used for roof cladding. Special window hoods also were included to protect open windows from the rain. In their most advanced form these hoods evolved into a special type of continuous pent roof called a *mediagua*, a broad, pitched overhang affixed at intermediate floors of a building to shelter window openings below. A mediagua runs like a continuous permanent awning around the perimeter of the external wall.

To protect the building interiors and contents from the effects of excessive humidity, family housing and bachelor officers’ quarters (BOQ) featured dry closets, small enclosures outfitted with a light bulb that burned continuously to reduce humidity, and circulate air (by convection), thereby inhibiting the growth of mildew [2.09]. In barracks, the dry closets were greatly expanded in size and referred to as “dry rooms.” Without dry closets and dry rooms, shoes, belts, and other leather goods would be covered in mold in an astonishingly short period of time. Light bulbs also were installed inside pianos to keep the wooden elements from warping. Fungicide was added to paint in order to help keep the mildew problem in check.

The management of water runoff during the prolonged rainy season was a major consideration in the layout of Fort Clayton. This was evident in the landscape, which was veined with a sophisticated system of surface drains and culverts [2.10]. Rainwater was shed directly off building roofs or directed through eave funnels into narrow concrete surface drains at building perimeters. From these drains the water quickly flowed into larger surface drains that ran between buildings. This runoff was in turn directed into paved culverts that drained into the Cardenas River [2.11]. The system worked beautifully during torrential rains. But in some areas the ground settled, creating low points in the surface drains that collected standing water and created a breeding environment for mosquitoes and other pests. Similar problems arose on heavily planted lots when surface drains became clogged with plant material.



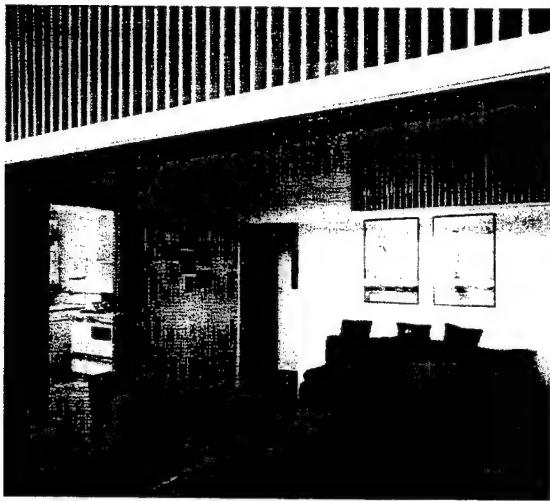
[2.09] Typical dry closet heating element assembly.



[2.10] Concrete drain details.



[2.11] To prevent ponding in this often rain-soaked environment, paved culverts help direct runoff down to the Cardenas River.



[2.12] This type of slatted wall opening is representative of an architectural detail that was used throughout the interior spaces of early post housing to improve ventilation.



[2.13] M Company, 33rd Infantry, in formation in front of their barracks. Note the use of numerous large screened windows in the barracks buildings.

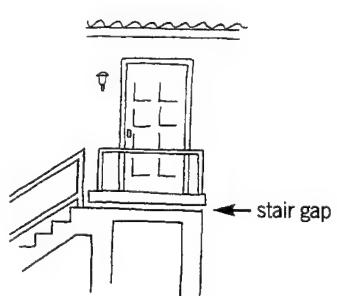
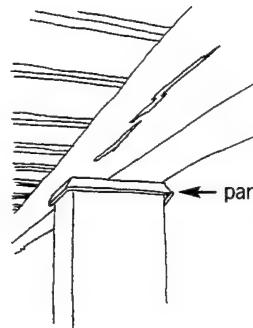
Ventilation Adaptations for Tropical Heat

The other major environmental consideration in Panama for facility designers was the unrelenting heat. Effective ventilation was essential to providing livable housing. Wide porches were incorporated into the designs for all residential units, both family housing and barracks. Interior walls often had slatted overhead openings and doors for better air circulation (at the expense of some privacy) [2.12]. There were also louvered transoms over interior doors.

The buildings included numerous windows on all sides for maximum cross-ventilation [2.13]. All porches and windows were copper-screened to keep mosquitoes outside, but before the advent of air conditioning porch windows were not glazed; the continuous tropical heat made that unnecessary and even counterproductive.

Adaptations for Resisting Termites

The architecture at Fort Clayton included interesting features to combat the termite problem. The use of concrete as the principal building material was the most obvious. Raising the first floor 4 ft above grade eliminated direct contact with the ground (except for the concrete foundation or piers). For temporary wood construction, metal collars called insect pans were installed to separate the ground floor concrete support columns from the wood components above. These metal pans extended downward and away from the column at a 45-degree angle, posing a formidable barrier to marauding termites. The wooden frames upon which the tile roofing was installed were fabricated of creosote-treated lumber. Perhaps the most interesting adaptation was the way outside stairs were constructed; stairs were installed separately from the building to create a gap of several inches across the course of the stairs, or between the top of the stairs and the building entry door [2.14].



[2.14] Sketches of typical insect pan and stair gap.

The Ever-Present Bohio

To soldiers who served in Panama, the humble bohio [2.15] was a feature of the environment only slightly less common than the merciless sun or the rivers of rain. In simplest terms, a bohio is a hut—a structure based on a form of housing that was common throughout tropical regions of the Americas when Europeans first arrived in the late 15th century. Constructed of readily available tropical materials—most notably palm leaves and wood—bohios are still a common form of family housing in disadvantaged rural areas of Latin America. In more urbanized areas an open-sided version of the traditional bohio was adapted for residential

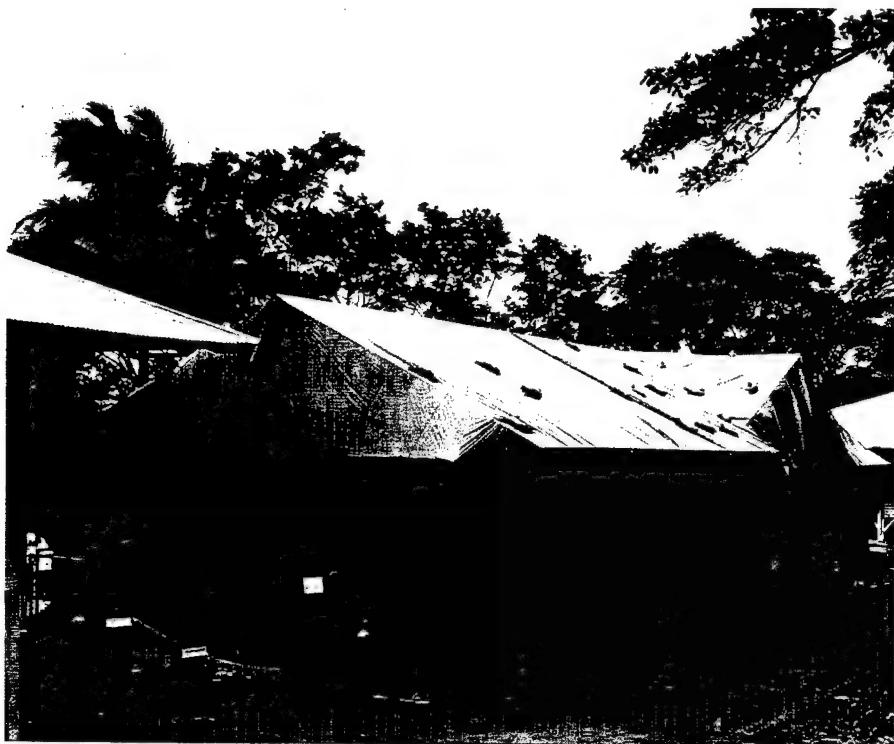
construction as an extension or enhancement of a patio, erected primarily as a sheltered area for relaxing or entertaining.

In the U.S.-run Canal Zone and the military installations hosted there, however, this indigenous form of housing was used as an inexpensive form of civil infrastructure. Bohios were erected in public spaces to provide shelter from the tropical sun or downpours for anyone who happened to be in the vicinity. Some contemporary bohios on Fort Clayton, like their traditional counterparts elsewhere, were made of poles (usually tree trunks) with a roof of thatched palm fronds that was

vented at the apex. As might be expected, though, the Army modified the traditional design to create a bohio that was truly built to last. This modern-style bohio was an open-sided structure consisting of masonry uprights on a concrete floor, supporting a Spanish-style clay tile roof. In terms of appearance and construction this type of bohio fit well with the tropical style of architecture that was so prevalent on Fort Clayton, and there is no doubt about its durability. But its materials absorbed and stored solar heat, making it a less effective place than the traditional thatched version to escape the brutal heat.

[2.15] Traditional (foreground) and modern-style bohios in front of Building 518.





[2.16] Wooden Canal Zone building sealed with gas-tight tarpaulins and ready for fumigation with methyl bromide, which penetrates lumber and kills drywood termite colonies.

Even with these architectural and materials adaptations, wood structures still needed to be fumigated regularly to control tropical insects [2.16].

The Construction Program

Funding and Tasking

Funds for the construction of Fort Clayton were provided under the Appropriation Act of 3 March 1919. The \$3.99 million appropriation provided for “the construction of barracks, quarters, and other necessary buildings for the accommodation of two regiments of Infantry, including water and sewer systems, roads, walks, and so forth.”¹⁹ Forts Clayton and Davis were to be identically constructed, and each would house one infantry regiment. The Secretary of War allotted funding for the project to the Governor of The Panama Canal on 23 April 1919. The appropriation was then divided among the necessary divisions of the agency. The Building Division was allocated \$2.85 million; the Electrical Division was given \$212,000; and the Municipal Division received \$842,000. An unexpended balance of about \$81,000 was retained.²⁰

The War Department’s first choice for constructing Fort Clayton was The Panama Canal due to the expertise and large labor force gained during construction of the canal and its myriad associated buildings and structures. The Building Division of the Department of Operation and Maintenance had previously carried out all new construction for the Army and the Navy fortifications in the Canal Zone.²¹

In 1917 the design group of The Panama Canal’s Building Division was tasked to provide plans and estimates for the two permanent infantry posts. As part of this effort

the Section of Surveys accomplished a topographical survey of the Miraflores Dump area to assist in the development of estimates. By the end of 1920, the Office Engineer's Section had produced plans for a complete set of buildings at Forts Clayton and Davis, including officers' quarters, barracks, stables, waste incinerator, and headquarters building.²²

The Building Division had no large building projects underway for the canal at this time, so it could devote most of its attention to the construction of Forts Clayton and Davis. By 28 March 1919, plans and estimates were far enough along for the Governor of The Panama Canal to advise the chief of office that the canal "has organization and equipment to commence work within two weeks after location is approved and can carry out project by July 1, 1920."²³ The military authorities formally approved the project as planned on 19 May 1919, and work at Miraflores began the next day. Mr. Samuel M. Hitt, who designed the Gorgas Hospital buildings, served as the main architect for the project, and Mr. A. Hall was named supervisor in charge of construction at the Fort Clayton site.²⁴

The initial work was a job for the Municipal Division, which was primarily responsible for grading and for the construction of roads, walks, sewers, and water lines. By the end of June about \$79,000 had been spent on the Fort Clayton project for preliminary surveys, mapping, grading, and the partial installation of cast iron water and sewer pipes. The Electrical Division installed 2200 volt feeder equipment at Miraflores substation, near the locks. The original electrical service on post—the 25-cycle Canal Zone standard—would be distributed via underground cables.²⁵ From the beginning The Panama Canal built both civilian towns and military posts with underground utilities. This approach may have been dictated by the heavy rains or the vulnerability of wooden utility poles to attack by termites. It also may reflect an aesthetic choice, as the Isthmian Canal Commission and Colonel Goethels made a conscious effort to design aesthetic appeal into Canal Zone construction.

Obstacles to Construction

Unexpected difficulties in acquiring the necessary laborers and construction materials caused construction delays at Fort Clayton. A clause in the appropriation act through which the construction was funded stipulated that the Governor of The Panama Canal purchase materials, supplies, and equipment from War Department surplus stocks. Although The Panama Canal had requisitioned materials such as roof tile, hardware, plumbing fixtures, millwork, and lumber by 23 June 1919, shipments arrived an average of 2 months after the promised delivery date. Also, supplies that had been contracted were not available through surplus stocks. In such cases it was necessary to buy the materials from private-sector manufacturers. This approach presented its own obstacles because another clause in the appropriations act prohibited the purchase of materials from private manufacturers if the price was more than 25 percent over the cost of manufacture by the government. World War I requirements had pushed up the cost of goods and services, so this cost criterion was hard to meet; the result was further construction delays while waiting for the materials ordered to become available through government stocks.²⁶

Similar problems with acquiring skilled tradesmen caused additional delays. As with materials, delays of at least 2 months between requisition and arrival of tradesmen were the rule. Consequently, construction crews were short of carpenters, plasterers, plumbers, painters, bricklayers, and sheet-metal workers. The problem was that pay rates in the Canal Zone did not reflect the rising wages in the United States in a timely manner; authorized wage increases for The Panama Canal were often several months behind. Other causes of delays in construction included problems transporting materials to shipping ports, congestion in U.S. harbors, and shipping delays related to stateside labor difficulties.²⁷

As a result of these delays, The Panama Canal was unable to finish either infantry post by the promised date of 1 July 1920. Most Fort Clayton buildings were completed, except the headquarters (85 percent) and two battalion barracks (one 85 percent, the other 70 percent). All buildings were constructed as designed. The Building Division had spent about \$1.3 million of its total allotment by that date. Panama Canal officials expected to complete the last three buildings by the end of August 1920. The Municipal Division had spent about \$355,000 of its allotment and work was 95 percent complete. In addition to grading, excavations, roads, and sanitary lines, the Municipal Division had built sidewalks, storm sewers and drains, curbs, gutters, and culverts, including one installed under the Cardenas River Bridge. The Electrical Division had installed street lighting, feeder cable, underground duct lines, transformer houses, and transformers, among other items.²⁸

By the end of August 1920, as promised in the revised work schedule, the first phase of construction was finally completed at a cost of about \$3.96 million. Due to a legal limitation on housing costs, however, construction of commander's quarters at Forts Clayton and Davis was deferred until 1922. Fort Clayton was officially declared available for occupancy on 16 September 1920.²⁹

The Infantry Moves In

The 33rd Infantry took possession of Fort Clayton on 25 October 1920 [2.17]. In October 1920 the 33rd Infantry was combined with the 14th and 42nd Infantries to form a new brigade. (As part of a February 1921 reorganization the 42nd Infantry was reas-

[2.17] Fort Clayton with the Panama Canal in the background.



PHOTO BY J. TROWERS
FORT CLAYTON

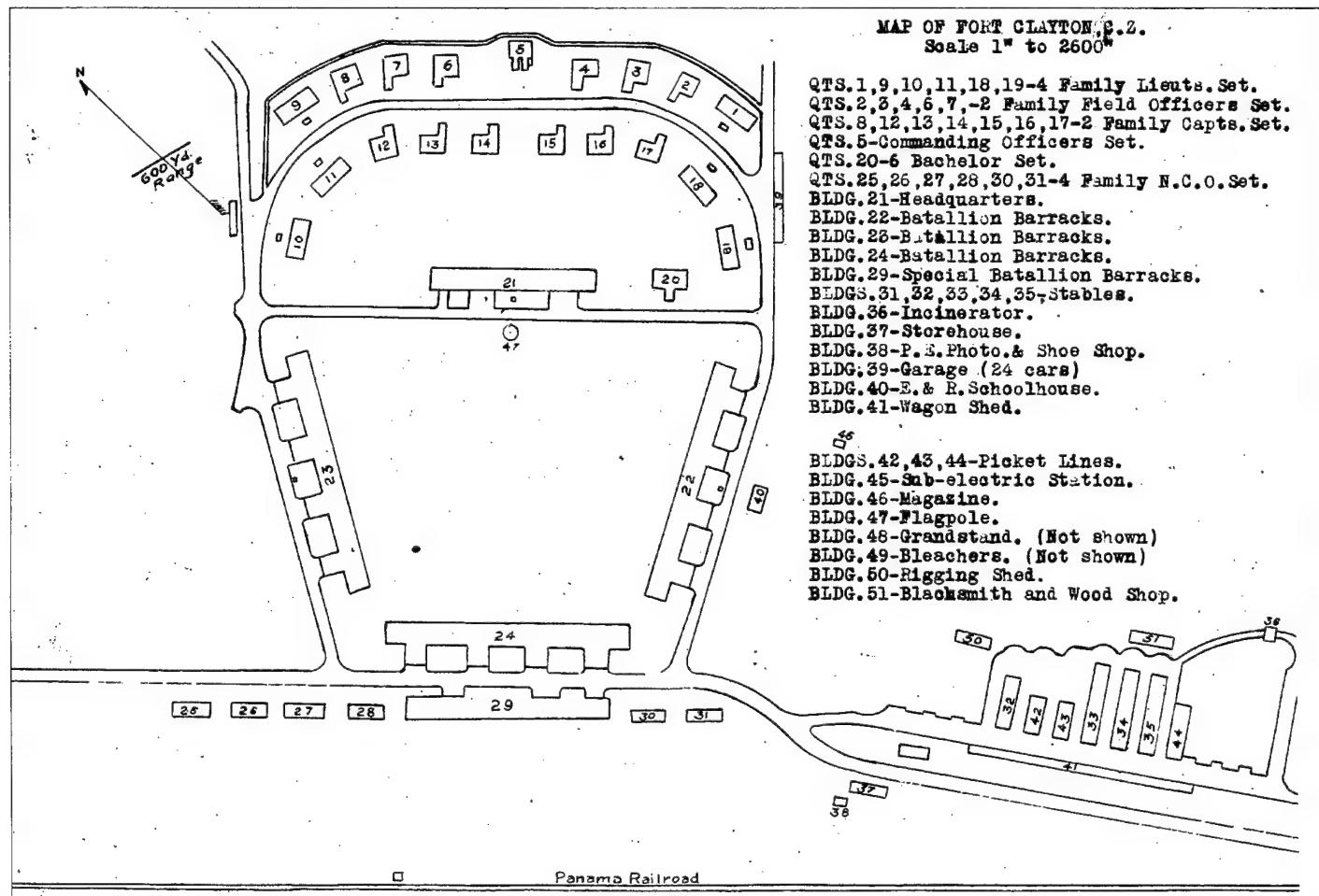
FORT CLAYTON, SHOWING COROZAL, BALBOA, AND PACIFIC ENTRANCE OF THE PANAMA CANAL IN BACKGROUND.

signed to another unit.) Then, on 19 March 1921 this new infantry unit was designated the 19th Infantry Brigade, and on 3 July 1921 this brigade became part of the newly formed Panama Canal Division. The principal mission of the 19th Infantry Brigade was to protect the Miraflores and Pedro Miguel locks of the Panama Canal against hostile land forces.³⁰

The First 36 Buildings

The first facilities built at Fort Clayton were located in the southeastern corner of the installation's boundary on the northwestern end of the Curundu reservation [2.18]. The site was bounded on the south by the Cardenas River and on the west by the Panama Railroad. The central element of the overall installation plan was the cluster of three battalion barracks and the headquarters building forming a quadrangle around a parade ground. Directly northeast, a semicircular road traced out a flattened arch over the top of the quadrangle. Two-story officer housing units lined both sides of this road. Further northeast was a large open area called Miller Field, which was used for recreation and athletic events. Stretching away to the north of the quadrangle area were the firing ranges. To the northwest of the quadrangle (and running along an east-west axis) was a sod landing field with a hangar at the western end. On the canal side of the westernmost battalion barracks stretched a line of buildings that provided NCO housing and a special barracks. To the south of the

[2.18] Map of the first buildings to be constructed at Fort Clayton.



quadrangle area were the stables and assorted industrial buildings. Gaillard Highway, the main road from Corozal to Pedro Miguel, ran through Fort Clayton between the line of housing and special barracks and the westernmost battalion barracks.

Upon completion of the initial construction in 1920, 36 buildings were in place at Fort Clayton. Their appropriation allotments and descriptions are as follows:³¹

5 field officers' quarters (two-family)	\$ 105,000
7 captains' quarters (two-family)	126,000
6 lieutenants' quarters (four-family)	132,000
1 lieutenants' bachelor quarters (6-set)	35,000
6 NCO quarters (four-family)	111,000
3 battalion barracks	598,000
1 special barracks	102,000
1 headquarters building	97,000
2 stables (62-stall)	30,750
1 stable (54-stall)	6,750
1 stable (35-stall)	4,375
1 wagon shed	5,800
1 waste incinerator	20,000

Residential Buildings

The Two-Family Field Officers' Quarters (Buildings 2, 3, 4, 6, 7)

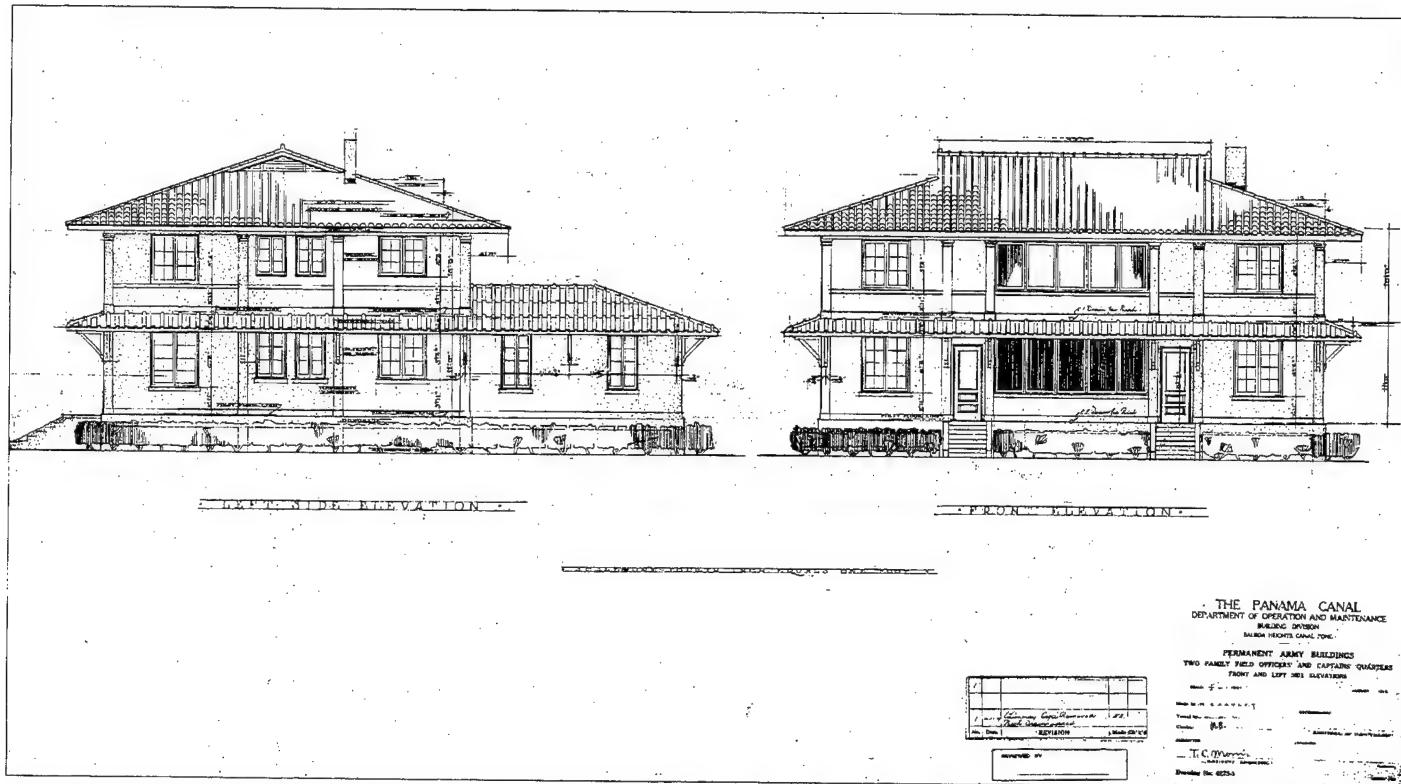
These were two-story buildings with one apartment on each floor [2.19]. The overall dimensions of the building (the allotment to each family) were 40 × 55 ft. The space was subdivided into a 7.5 × 22 ft porch; a combined living and dining room, partitioned by a columned opening, measuring 16.7 × 30 ft; a kitchen and pantry; three bedrooms (each with a dry closet); and two toilet rooms—one containing tub and separate shower, the other shower only. At the rear of the building was a one-story servants' quarters and laundry wing.

The Two-Family Captains' Quarters (Buildings 8, 12, 13, 14, 15, 16, 17)

This building type was virtually identical to the two-family field officers' quarters except it also included a 3.5 ft projecting hood sheltering the first-story windows [2.20].

[2.19] Two-family field officers' and captains' quarters.





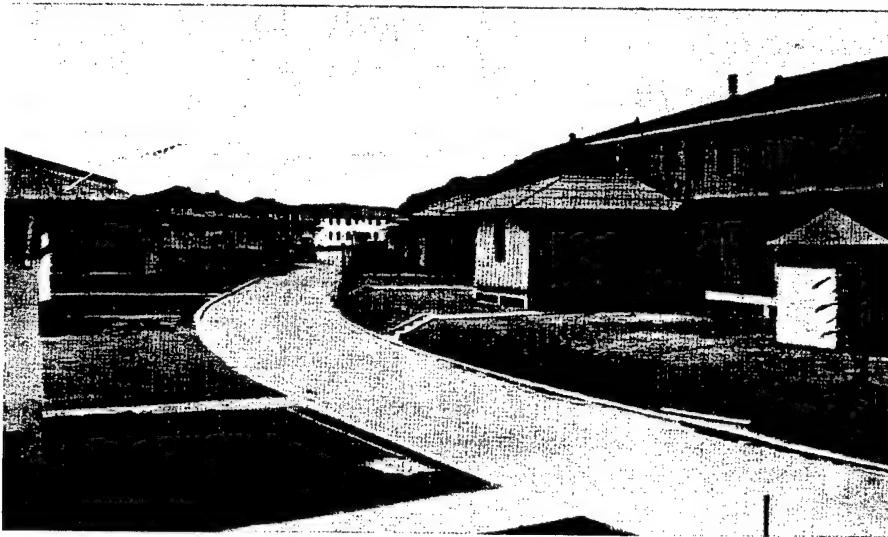
The Four-Family Lieutenants' Quarters (Buildings 1, 9, 10, 11, 18, 19)

These were 36×90 ft rectangular two-story building with two apartments on each floor [2.21]. Each apartment had a porch 8.1×40 ft and a combined living and dining room similar to those in the field officers' quarters described above, but measuring 13.75×26.5 ft. Except for the pantry and the separate shower and bath, these apartments contained the same rooms (but smaller) and closets as the two-set field officers' and captains' quarters. In the rear of the apartment building, as a separate structure, was an 11×26 ft servants' quarters containing two rooms for the four servants plus and toilet and shower bath. The laundry tubs for these lieutenants' quarters were installed in the kitchens.

[2.20] Exterior of duplex officers' quarters showing several defining aspects of military construction in Panama. Decorative pilasters appeared on all the original barracks and quarters, and served as a unifying architectural element for the post.

[2.21] Four-family lieutenants' quarters.





[2.22] Postcard view of Quarters 1–20; alley view showing servants' quarters.

In all of the officers' quarters described here and above, servants were housed two to a room [2.22]. The colonel was allowed four servants; field officers and captains were allowed two servants, and lieutenants had one servant.

The 6-Set Lieutenants' Quarters (Building 20)

This was a two-story structure containing apartments for six bachelor lieutenants and one inspector [2.23, 2.24]. Each apartment extended the depth of the building and consisted of a front porch, living room, bedroom, and private bath. The building included a shared library, a combined living and dining room, kitchen, and pantry. There was also a rear wing containing two servants' rooms with toilet and shower.

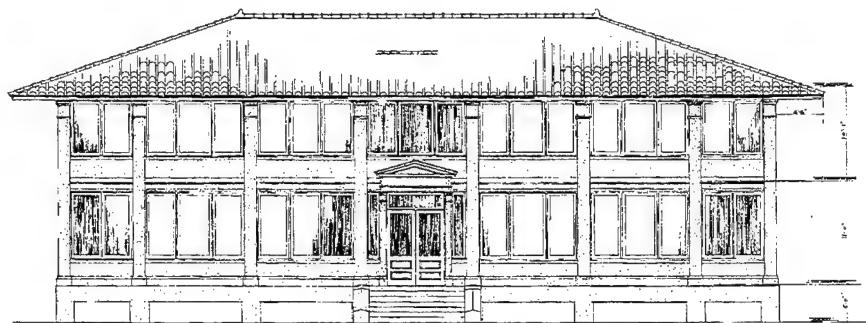
All of the original officers' quarters were converted to NCO quarters in 1981. They continued to serve this purpose until Fort Clayton closed. The buildings underwent rehabilitation in the early 1950s with new baths, kitchens, doors, and windows. At that time, new adjustable



[2.23] Six-set lieutenants' quarters.



REAR ELEVATION



FRONT ELEVATION

THE PANAMA CANAL
 DEPARTMENT OF OPERATION AND MAINTENANCE
 BUILDING DIVISION
 BALboa Heights, Panama
 PERMANENT AREA BUILDINGS
 SIX-SET LIEUTENANT'S QUARTERS
 FRONT AND REAR ELEVATIONS
 Drawing No. 4378.2
 T. C. Morris
 Date: 12-1-58
 Drawn by: A. J. [unclear]
 Checked by: [unclear]

[2.24] Exterior appearance of Building 20. Note the Greek Revival stylistic decoration that appeared on all of the larger quarters and barracks in the initial construction period.

aluminum jalousie* windows were installed. These were replaced between 1976 and 1978 with smaller single-hung[†] windows, and the openings filled in with plastered terra cotta blocks. Patios and balconies, accessible by new sliding glass doors, were added to the quarters in 1980. Central air conditioning was installed in 1986 and the Spanish tile roofing materials were replaced with metal in 1990. Carports for these quarters were built in 1932, and a few more were added in 1957. All carports were replaced in 1978 and 1979. Building 20, the 6-set lieutenants' quarters, was remodeled in 1958 for use as four-family NCO quarters. At that time all remaining awnings and mediaguas were removed, as was the front porch. Wood louvered windows were replaced with adjustable aluminum jalousies. A laundry shed was added to the separate servants' quarters for the four-family lieutenants' quarters sometime before 1959, at which time the buildings were upgraded with new doors, windows, roof, and bath fixtures. These quarters were rehabilitated again in 1978.

* Over the years most of the jalousies installed on Canal Zone military housing had opaque louvers, made either of wood or aluminum. Glass louvers were sometimes used, but they were fairly uncommon in earlier construction due to the expense of installing and maintaining them.

† The term "single-hung" refers to a window with one operating sash that slides past a stationary sash.



[2.25] Four-family NCO quarters.

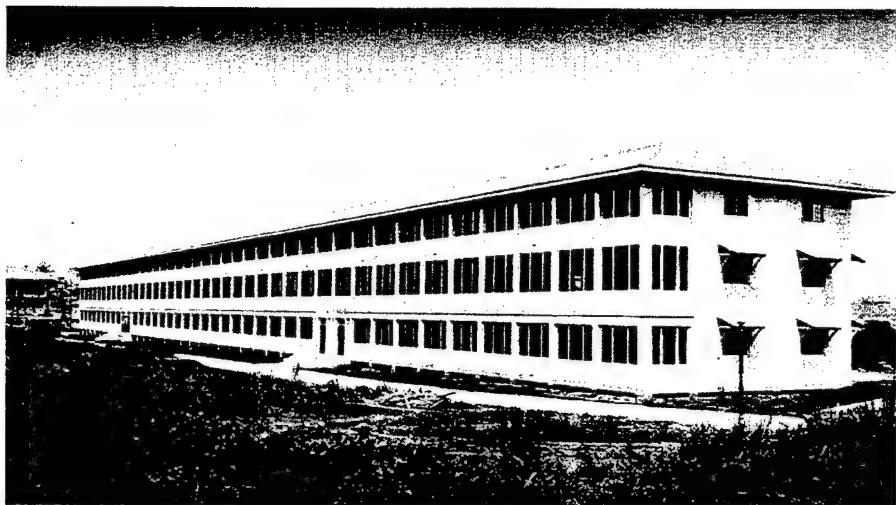
The Four-Family NCO Quarters (Buildings 25, 26, 27, 28, 30, 31)

These were rectangular two-story buildings, 30.5×75.6 ft, with two apartments on each floor [2.25]. Each apartment had a 7×32 ft porch, a 14×24 ft combined living and dining room, a kitchen (including laundry tubs), two bedrooms, a toilet and bathroom, and one dry closet.

The original NCO housing retained this use until Fort Clayton closed. During the late 1920s the 33rd Infantry Band lived and rehearsed in Building 30. The buildings were renumbered (802, 803, 805, 807, 814-15) in 1959 in conjunction with a major housing construction project, and were rehabilitated in 1952 with new kitchens, baths, doors, and adjustable aluminum jalousie windows. These jalousies were replaced with glass sliding windows in 1977, and again in 1987 with single-hung aluminum frame windows. As the newest windows were smaller than the previous ones, the window openings had to be reduced in size by partially filling them with concrete blocks. Central air conditioning was installed in 1988. Carports were provided in 1958. Wood latticed laundry sheds built in 1949 were spaced in between some of the quarters. They were replaced in 1973 with concrete block structures.

Battalion Barracks (Buildings 22, 23, 24) and Special Barracks (Building 29)

The battalion barracks faced inward on three sides of a hollow square, with the fourth side being occupied by the headquarters building [2.26]. Each battalion barracks building was three stories high and built of uniform bays 12 ft wide from center to center of columns on the front elevation. Each barracks building was 480 ft long and 44 ft deep to accommodate four companies. Lengthwise they were divided into four equal parts by concrete block walls, completely separating each company. (This partitioning scheme proved inadequate over time because it pre-



[2.26] Battalion Barracks.

vented adequate cross-ventilation, which was an unacceptable design flaw before air conditioning was available.)

Behind each company section was a wing 36 ft wide (3 bays) and projecting 33 ft. A 9 ft wide porch extended the entire length of the building on all floors. One row of columns midway between the porch and rear wall of the building proper divided each company's area into 20 units of 12 × 17.5 ft each (including exterior walls and partitions), arranged two units deep.

The first floor of each company's section was partitioned as follows: mess hall, day-room, general stores, office, first sergeant, mess and supply sergeant, tailor, barber, and pantry [2.27]. (The tailors made uniforms for each man when he arrived on post.) On the first floor the rear wing was partitioned into a 21.5 × 35.5 ft kitchen storeroom and a cook's room. The second- and third-floor plans of both the main building and the rear wing were the same. All but two of the 20 units, which were partitioned into two noncommissioned officer rooms, formed a squad room that extends 10 ft into the rear wing. The squad room was designed to accommodate 70 soldiers, allotting 57 sq ft per man. At the end of the rear wing on each upper floor



[2.27] E Company day room.



[2.28] Special Barracks.

was the toilet and washroom; fixtures were provided in the ratio of one toilet per 10 men, one wash basin per 5 men, one shower head per 10 men, one laundry tub per 20 men, and 1 foot of urinal trough per 5 men.

The special barracks (Building 29) was the same design as the battalion barracks, but only two stories high instead of three [2.28]. The width of the special barracks was the same as the battalion barracks; 12 ft bays behind the continuous porch formed units of the same size and arrangement found in the battalion barracks. However, the special barracks had no rear wings. The total length of the building was 33 bays (396 ft) which were divided by concrete block cross walls. On the first floor the cross walls subdivided the 33 bays of the building into sections from left to right as follows: headquarters company, magazine, ordnance store and repair shop, machine-gun company, and supply company. There was a flight of stairs at each end of the common porch and a third flight in the center.

The battalion barracks and special barracks remained in place and underwent little change until they were demolished in the fall of 1957 as part of the training program for engineers. The area was soon rebuilt as the site of NCO quarters.³²

Administrative Facilities—The Headquarters Building (Building 21)

Building 21 harmonized in design with the general scheme of the barracks—a continuous two-story porch on the front with a column spacing of 12 ft [2.29]. This building was 28 bays (336 ft) long but 7 ft wider than the barracks (51 ft). Unlike the battalion barracks, Building 21 had no rear wings. A row of columns down the center of the building behind the porch laid out the same unit scheme as the barracks, but they measured 12 × 20.25 ft (including exterior walls and partitions). The front porch was 10.5 ft wide, making it wider than the barracks porch.

The first floor of Building 21 was partitioned as follows: post exchange (PX), stock room, lunch room, prison, guardroom, kitchen, prison bathroom, sergeant (and guardroom) toilet, officer toilet (off the guardroom), barber, shoemaker, tailor,

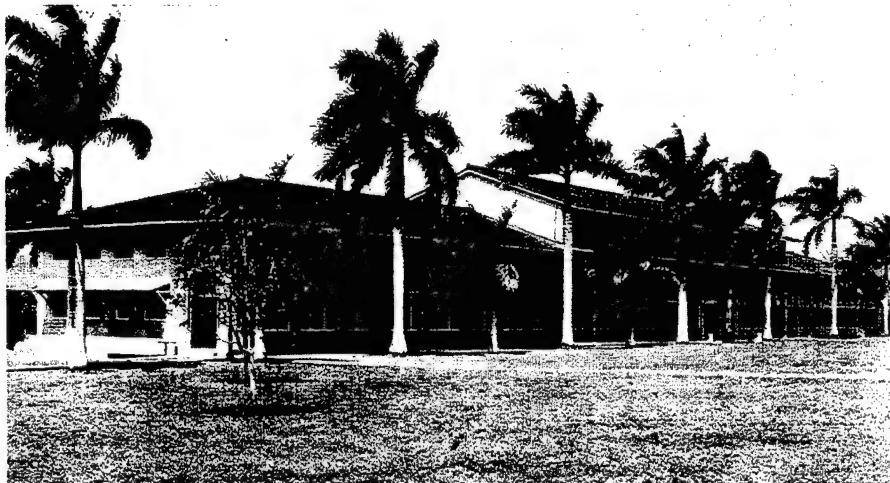


[2.29] Regimental Headquarters.

pantry, office (for PX), and PX toilet. The remaining units were used as an infirmary, which comprised a 12-bed ward, mess, kitchen, ward bathroom, ward attendant, dispensary, surgeon, assistant surgeon, dressing room, waiting room, dentist, linen stores, and medical stores (and private toilet).

Space on the second floor was allotted as follows: auditorium, including stage and dressing rooms, measuring 39 ft wide in the clear by 120 ft long to the front of the stage; 26-bed personnel dormitory, court-martial, commandant, adjutant, field officer, field clerks, quartermaster clerk, quartermaster, supply officer, adjutant's sergeant, summary court, noncommissioned room (off the personnel dormitory), personnel dormitory bath, mailing room, court-martial waiting room, printing room, and officers' toilet [2.30].

In 1946 the second floor became home to an administrative school to train clerical personnel. The PX continued operating on the first floor along with several concessions, and Post Headquarters also remained there. In the early 1960s the building was demolished, and officer housing was erected on the site in 1965.³³



[2.30] Post Exchange in Building 21, Headquarters Building.

Operations and Support Facilities

33rd Infantry Stable Area

In addition to the headquarters building, barracks and housing a number of other buildings and facilities were constructed to support the mission of the 33rd Infantry. The primary means of transportation for the infantry was by horse or mule, so most of the original support facilities were stables. Located south of the quadrangle, the stable area was in the section of Fort Clayton that would later occupy the 850 to 867 housing area.

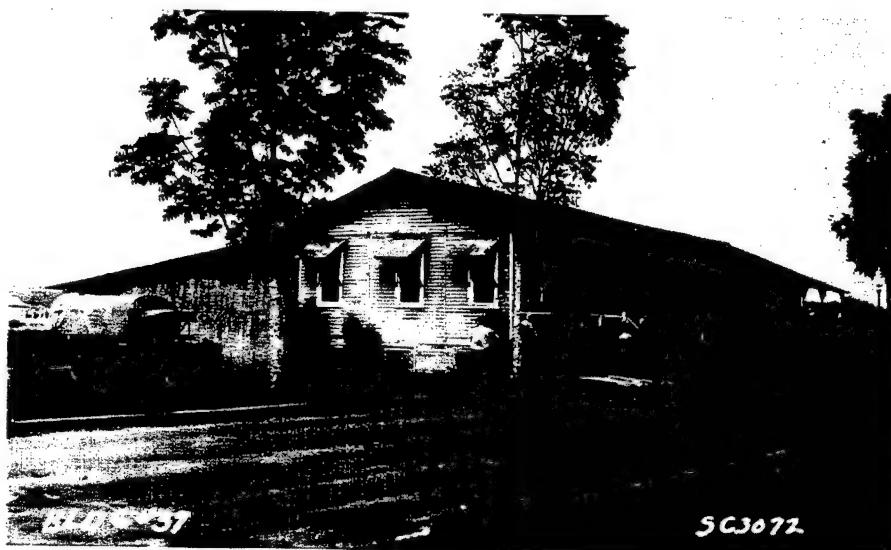
All of the horse and mule stables were built on a concrete foundation with concrete floors, wood and screen walls, and galvanized iron roofs.³⁴ These rectangular buildings (27 ft wide by 125–256 ft long) each contained two rows of facing stalls divided by a 4 ft wide central passage. The buildings were equipped with electricity, water, and sewer connections. In addition to the animal stalls the stables contained a saddle room, a squad room, office space, and latrines.

All of the buildings in the 33rd Infantry stable area were demolished between May 1953 and September 1961.

The Quartermaster Office and Warehouse (Building 37)

This facility measured 110 × 46.5 ft [2.31]. Constructed on a wood foundation with wood floors and walls, the building was roofed with galvanized iron. A porch ran the entire length of the building.

The building underwent minor alterations in 1928 (to serve as a store house) and again in 1933 (to function as a PX lunch room with a "refreshment garden"). During its final incarnation in 1935, the building was converted to the post tailor and cobbler shop, including a hat shop, store-room, dressing room, cutting room, tailor shop, and



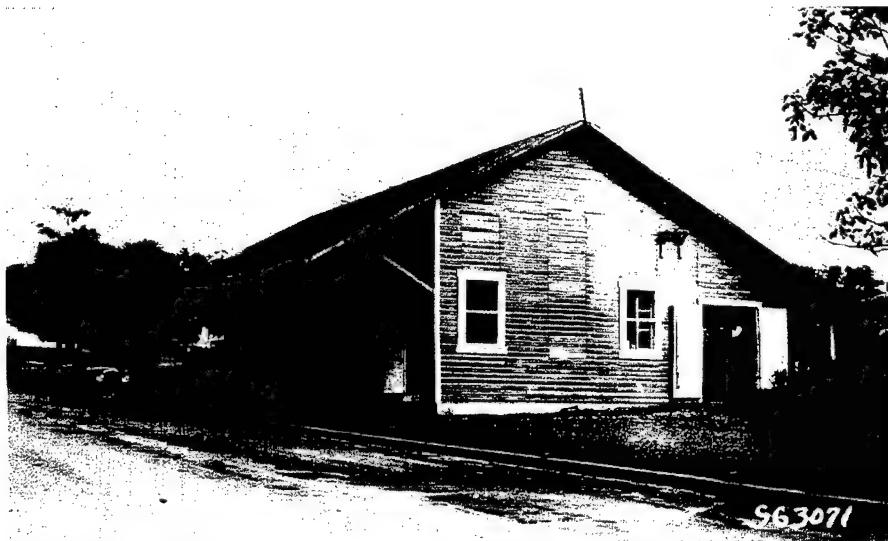
[2.31] Building 37, Quartermaster Office and Warehouse.

cobbler shop. Building 37 was demolished sometime around 1956.

Utilities Shop (Building 54) and Miscellaneous Small Buildings

Building 54 was rather small, measuring 38 × 62 ft [2.32]. It originally housed a plumbing shop, electrical shop, paint shop, and carpentry shop. After alterations in 1936, the entire floor space was used for a carpentry shop.

Other related minor buildings that were turned over to the 33rd Infantry in 1920 included the wagon shed and firehouse (Building 41), which accommodated 26 vehicles, and eight transformer houses. The transformer houses measured 14 × 18 ft, and with their characteristic stuccoed concrete, tile block walls and tile roofs, they resembled miniature housing units. A smaller version of this transformer house measuring 6.25 × 6.25 × 12 ft became ubiquitous throughout the Canal Zone. They were built on military installations as well as civilian housing areas and commercial districts [2.33].



[2.32] Building 54, Utilities Shop and Tool Room.



[2.33] A typical transformer house constructed in 1920.

Solid Waste Incinerator

The incinerator, designed to treat the refuse of one brigade, was completed and put into operation on 9 December 1920. Less than 3 months later repair costs to the facility had exceeded \$250 and a written complaint was registered by the Panama Canal Department's Office of the Quartermaster to the Chief Engineer of The Panama Canal, the agency responsible for its design and construction. The Office of the Quartermaster believed the problem was "due to faulty construction, poor engineering or poor materials."³⁵ The Panama Canal's Department of Operation and Maintenance, after completing an inspection of the facility, determined that the problem was due to the fact that, shortly after completion, the facility was put into continuous operation until February 1921, when one of the arches in unit No. 2 had to be replaced.³⁶ The Department of Operation and Maintenance concluded that the failure of the facility was due to one of several factors related to incinerator operation rather than poor design or construction by The Panama Canal. There is no record of how this issue was resolved, but it would not be the last time the Panama Canal Department was dissatisfied with construction work by The Panama Canal.

Completion of Original Infantry Post Construction

In 1922 animal stables, an educational facility, a powder magazine, and commander's quarters were constructed at Fort Clayton.

Additional Operations and Support Facilities

The 1922 stable accommodated 48 animals and was similar in design to the stables constructed 2 years earlier. Building 46, a small arms powder magazine, was completed in June 1922. This 14 × 20 ft building was constructed of concrete block walls, concrete flooring, and covered with a roof of galvanized iron and concrete.

Building 46 was converted to a storage shed in 1965, and was finally demolished in 1993.

The educational facility, Building 40 was called an "athletic recreation school building" [2.34].³⁷ It was located near the stables and most likely was used as a training center for soldiers rather than a schoolhouse for children.

The educational mission of this building lasted only 5 years; by 1927 it was being used as an officers' club. This utilization lasted only 2 years because, in the words of the 33rd Infantry Commanding Officer, it was "totally unsuitable and poorly located in the vicinity of the stable area."³⁸ In 1929 the facility was converted into a guardhouse with cells, rooms for the Officer of Guard and the

[2.34] Building 40, Guard House.



Prison Officer, an NCO office, and latrines. The building was finally demolished in 1941.

The Commander's Residence

The final element of the post was the commander's quarters [2.35]. Construction of this building proved to be problematic because its projected cost exceeded a legal maximum set in the appropriation. Construction was delayed in hopes labor and material costs could be reduced. But unable to find extra funds and unwilling to let the appropriated money expire, construction finally began on 13 March 1922. In order to stay within the spending limit, plans for the building were revised. Instead of the original two-story plan, the structure was scaled back to one story. Wood floors were omitted in most living areas and the quality and amount of trim was reduced. Planned double interior doors were eliminated and replaced with standard-size doors and windows.³⁹

The commander's quarters was the only single-family housing unit on post when it was constructed. The one-story building was raised 3 ft above grade on concrete piers. The main building measured 64 × 60 ft but included two rear-projecting wings each 30 × 16 ft in length [2.36]. As with the other quarters, concrete was used for walls and floors. The roof was originally clad with asphalt shingles. The main building was constructed with a verandah 12 ft wide at the front door and 8 ft wide along the sides and rear. Two living rooms stretched down the center of the house and led into a hallway from which the wings were accessed. Flanking the living rooms on both sides were four corner bedrooms; a short hallway connected the front bedroom with the back one on each side. Off the hallways on each side were a closet and a lavatory. One of the rear wings housed the kitchen and storage facilities; the other housed servants' quarters and baths. A garage ran along the outside of the kitchen wing.⁴⁰

The commander's quarters were finished by 30 June 1922 at a cost of \$14,012. The first occupant, Colonel W. O. Johnson, 33rd Infantry, was displeased by several aspects of his new lodging and reported this to his superiors. The roughness of the concrete floors, the lack of ornamental trim, and the lack of blinds for privacy were



[2.35] Front view of Quarters 5.



[2.36] Rear view of Quarters 5.

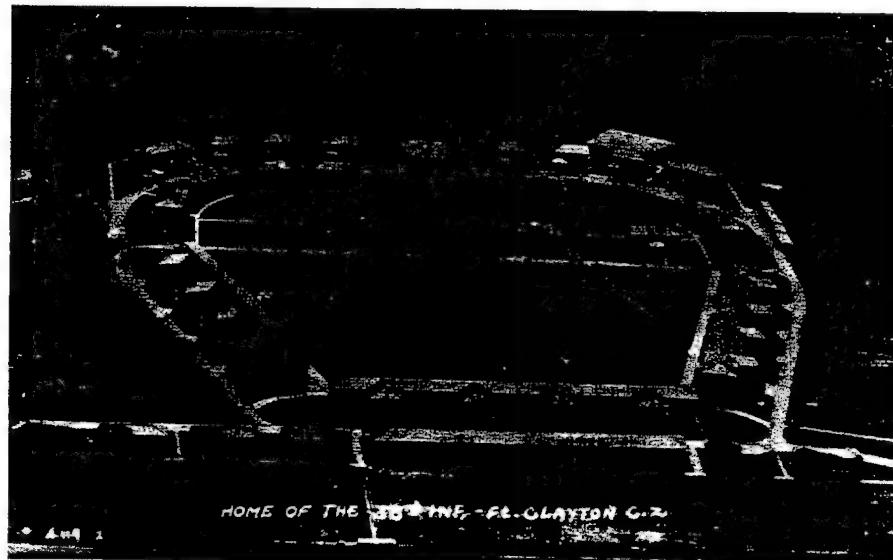
of particular concern to him. The Panama Canal Constructing Quartermaster replied to the complaint by stating that the Panama Canal Department had approved the construction plans. He also indicated that the need for maximum ventilation while keeping out the rain led to the choice of designing almost all quarters in the Canal Zone with open verandahs; the use of blinds, he stated, would undermine the utility of this design. Although the building was probably not as comfortable as it would have been without the imposed cost ceiling, the Quartermaster's response ended the matter.⁴¹

In 1954 the commander's quarters received a detached garage. Otherwise the building remained much the same until 1978, when the original windows were replaced and the window openings were reduced in size. At this same time the porch screens and wood trim were replaced, and the interior was closed off from the porch. The building received central air conditioning in 1988. The building's use changed in 1981 when it was designated as NCO housing.

Fort Clayton's Place in the Canal Defense Mission

By the 1920s, all components of the original canal defense infrastructure were in place. Perched on a shelf of Ancon Hill, Quarry Heights housed the Command that coordinated the entire defense of the Panama Canal. The Atlantic approach to the canal was guarded by the huge coastal artillery guns bristling from Forts Sherman and Randolph. On the Pacific side, Forts Amador and Grant watched over the canal entrance with their powerful coastal artillery batteries. The infantry emplacement at Fort Davis protected the Gatun Locks and power plant. And by 1922, with construction of their installation completed, the soldiers of Fort Clayton assumed their role as guardians of the Miraflores and Pedro Miguel Locks.

Thus fortified, the canal was considered safe from any threat. And, for a while, it was [2.37].



[2.37] Aerial view of the first buildings at Fort Clayton.

Notes for Chapter 2

- 1 *Canal Record*, 15 July 1914, 1.
- 2 Board of Officers to Brigadier General A. Cronkhite, U.S.A., 28 August 1917, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 2, National Archives and Records Administration, College Park, MD.
- 3 U.S. Adjutant General's Office, *Acquisition of Land in the Panama Canal Zone: History of World War II* (n.p., n.d.), 6–14; *Land Holdings of the Armed Forces in the Canal Zone* (Quarry Heights, CZ: Panama Area Joint Committee, Headquarters Caribbean Command, 1 July 1956), 2; *Canal Record*, 4 February 1920, 357.
- 4 James C. White, "Ft. Clayton—A History," *Southern Command News*, 3 April 1970, 20.
- 5 "Memorial," *Southern Command News*, 19 July 1968, n.p.
- 6 Memorial marker hand inscribed by author, January 1996.
- 7 "Installation Design Guide: Fort Clayton, Panama" (Jacksonville, FL: Harland Bartholomew and Associates, September 1990), 1.1.4; "Rapid Ecological Assessment of the Lands in Panama Managed by the United States Department of Defense" (n.p.: National Association for the Conservation of Nature (ANCON), 31 December 1994), 29; Geoffrey C. Burt and Anne M. Spafford, "The Shaping of Landscapes at U.S. Military Installations in the Former Panama Canal Zone, Republic of Panama" (Champaign, IL: United States Army Construction Engineering Research Laboratory, 1996), 34–35.
- 8 AG Historical Branch, *Military Personnel*, 87.
- 9 Ibid., 88.
- 10 Ibid., 88–93.
- 11 Ibid., 97.
- 12 Ibid., 87, 94–97.
- 13 Memorandum from Chief of Staff, PCD to Department Quartermaster, PCD, 6 August 1919, Record Group 185, Panama Canal 1914–1950, Box 383, Folder 2, National Archives and Records Administration, College Park, MD.
- 14 Board of Officers to Brigadier General A. Cronkhite, 28 August 1917.
- 15 J.W. Joseph, Mary Beth Reed, and Mark Swanson, "Peace Has Her Victories No Less Renowned Than War: A History of Gorgas Hospital" (Mobile, AL: U.S. Army Corps of Engineers, 1996), 45.
- 16 R. Christopher Goodwin and Associates, Inc., *National Historic Context for Department of Defense Installations, 1790–1940*, Vol. I (Baltimore, MD: U.S. Army Corps of Engineers, 1995), 8, 29, 47, 154, 175–76, 179.
- 17 The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1919* (Washington, DC: GPO, 1919), 109.
- 18 Ibid., 109.
- 19 Ibid., 348.
- 20 The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920* (Washington, DC: GPO, 1920), 53.
- 21 The Panama Canal, *Annual Report for 1919*, 3.
- 22 The Panama Canal, *Annual Report for 1917*, 75; The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1918* (Washington, DC: GPO, 1918), 13; The Panama Canal, *Annual Report for 1920*, 107.
- 23 The Panama Canal, *Annual Report for 1920*, 53.
- 24 Ibid., 5, 52–53.
- 25 The Panama Canal, *Annual Report for 1919*, 7, 9.
- 26 Ibid., 347–348; The Panama Canal, *Annual Report for 1920*, 53.
- 27 The Panama Canal, *Annual Report for 1920*, 5, 53–54.
- 28 Ibid., 53–55, 84; Letter from T.C. Morris, Resident Engineer, The Panama Canal to Department Quartermaster, Panama Canal Department, Ancon, CZ, 6 February 1920, Historical Files, Corozal, Panama: Directorate of Engineering and Housing, United States Army Garrison-Panama, 1.
- 29 The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1921* (Washington, DC: GPO, 1921), 33–34; The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1922* (Washington, DC: GPO, 1922), 23; Letter from Chester Harding, Governor, The Panama Canal to Commanding General, Panama Canal Department, Quarry Heights, CZ, 16 September 1920, Historical Files, Corozal, Panama: Directorate of Engineering and Housing, United States Army Garrison-Panama, 1.
- 30 Dolores De Mena, *The Era of U.S. Army Installations in Panama* (Fort Clayton, Panama: USARSO History Office, 1996), 127; Baldwin, *History of the Panama Canal Department*, 369; Howland, *The Infantry in the Canal Zone*, 382–384.
- 31 The descriptions of barracks, quarters, and administration buildings are direct quotes from The Panama Canal, *Annual Report for 1919*, 109–113.
- 32 "First Barracks At Clayton Fall Prey to Operation Demolition, Buccaneer, 1 November 1957, 5; Letter from Lieutenant Colonel Martin A. Peters, U.S. Army (Ret) to author, 10 December 1999.
- 33 Ibid.
- 34 It appears likely that most references in the property records to "iron" roofing materials actually refer loosely to some form of ferrous sheet metal. Iron (i.e., cast iron) would not have been a highly practical roofing material due to its weight and lack of ductility. With this caveat in mind, the wording in the current text reflects the terminology in the official Army property records without necessarily indicating the exact metallurgical composition.
- 35 Letter from Captain F.A. Green, 33rd Infantry, Office of the Quartermaster, Panama Canal Department to Chief Engineer, The Panama Canal, 26 November 1921, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration, College Park, MD.
- 36 Letter from A.C. Miller and J.B. Fields, Department of Operation and Maintenance, The Panama Canal to Engineer of Maintenance, Panama Canal Department, 17 December 1921, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration, College Park, MD.
- 37 Letter from Colonel Frank B. Hawkins to Commanding General, Panama Canal Department, 9 February 1928, Record Group 407, Office of the Adjutant General Central Files 1926–1939, Box 2990, Fort Clark to Fort Clayton, National Archives and Records Administration, College Park, MD.
- 38 Ibid.

- 39 Letter from Constructing Quartermaster, Panama Canal Department to Engineer of Maintenance, The Panama Canal, 7 March 1922, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration; College Park, MD; Memorandum from Acting Chief Quartermaster, The Panama Canal to Engineer of Maintenance, The Panama Canal, 11 March 1922, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration, College Park, MD.
- 40 *Fort Clayton Construction Book*, War Department Q.M.C. Form No. 117 (Old No. 173 A), Revised 27 August 1932, n.p.
- 41 Letter from Colonel W.O. Johnson, 33rd Infantry, Fort Clayton, Canal Zone to The Adjutant General of the Army, 14 September 1922, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration, College Park, MD.

CHAPTER 3

Settling in for the Century: Between the Wars at Fort Clayton (1923–1935)

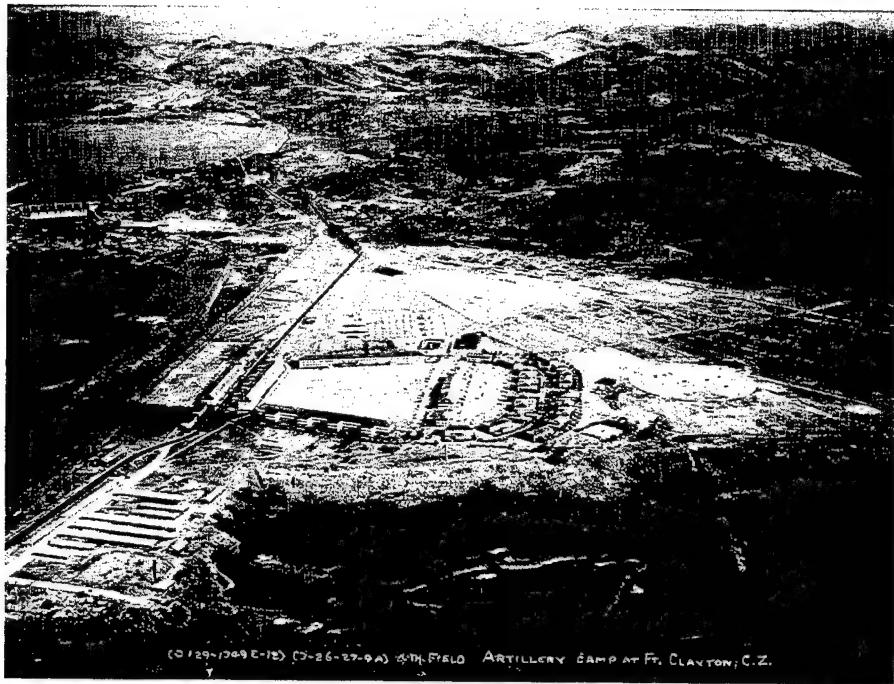
Funding Stagnation and Facility Disrepair

The construction of Fort Clayton was completed in the early years after World War I. Over the decade that followed the installation remained essentially unchanged. This fallow period was not unique to Fort Clayton, however; it was more or less the norm across all U.S. military services at the time, and most U.S. installations were similarly affected. Large war debts created severe budget constraints for the War Department. These constraints were effectively compounded in the arena of public opinion, where a disarmament sentiment was fueled by postwar idealism; the formation of the League of Nations bolstered a widespread belief that future international disputes could be solved through negotiation, making large standing armed forces obsolete. In the face of such public sentiment there was considerable pressure to reduce military expenditures. And then the Great Depression spread over the nation like a dense, paralyzing fog.

By the mid-1920s the physical deterioration of World War I-era Army cantonments had become serious. In response to this problem Congress in 1926 enacted Public Law No. 45, which authorized the Secretary of War to close and sell some installations in order to raise money for needed new construction. It was during this period that the Quartermaster Corps began to plan bases as integrated installations instead of *ad hoc* agglomerations of individual buildings. The Quartermaster Construction Division Planning Branch, created in 1931, employed trained architects and landscape architects. Their efforts were influenced by the Garden City and City Beautiful urban planning movements, which had a growing impact on Canal Zone post design between the wars. These new design influences reflected greater harmony with nature, simplicity, utility, and unity of design. Topography was incorporated, not bulldozed away, into new road layouts. In residential areas, especially, roads meandered and curved with the landscape. As posts expanded in terms of functional units, the separation of functions became more distinct. Installations developed spatially separate areas for housing, administration, physical plant support, etc. Housing was often further divided into areas for officers, NCOs, and enlisted personnel. New decentralized parade grounds were created, each associated with a specific functional area. Architecturally the various functional areas were often unified through the application of common design themes such as continuity of building materials. When Fort Clayton finally received funding for major new construction in the early 1930s, these design principles began to appear in the post's layout [3.01, 3.02].¹

[3.01] 1990s aerial view of Fort Clayton showing elements of design principles from the 1930s.

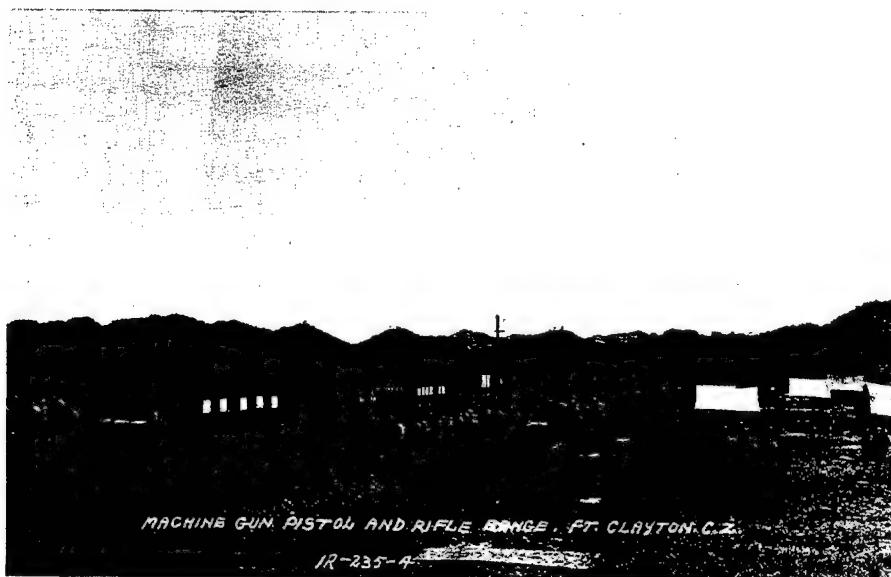




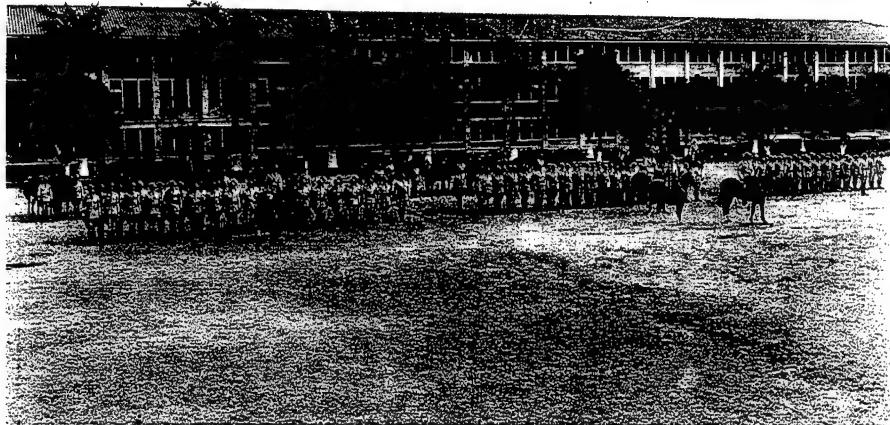
[3.02] Aerial view of Fort Clayton prior to 1930s construction programs.

The Fort Clayton Training Mission

Although there was no significant new construction during the 1920s, Fort Clayton developed into a busy, mission-critical installation during this time. Fort Clayton was home to one regiment comprising the 33rd Infantry, roughly 1200 men. It was part of the Pacific Sector, Panama Canal Department, along with Headquarters and Headquarters Company-Pacific Sector, 4th Coast Artillery, 11th Engineers, 15th Pack Train, and the Junior Mine Planter Schumnn.² Training these troops was part of the overall mission of the Command in order to make sure an effective, efficient defense organization was in place [3.03, 3.04].³



[3.03] Machine gun, pistol, and rifle range, Fort Clayton.



[3.04] Members of Machine Gun Company M,
33rd Infantry, Fort Clayton, March 1933.

During the rainy season, from April through November, troop readiness was maintained through “technique and garrison training,” which consisted primarily of drill exercises, weapons training, and inspections [3.05, 3.06].⁴ The horses and mules needed rainy season “training” as well. About once a week members of the Service Company would take mules to a beach near the ruins of Old Panama, fill up sandbags and load them onto the animals for delivery back to Fort Clayton. This was not an idle exercise: the sand would be used to keep down the mud in the corral and stable areas, and the activity also kept the animals in shape. All this rainy season training was put to use during the December–March dry season, when the soldiers participated in tactical training in the jungle. These exercises often involved both Army and Navy personnel in joint maneuvers and operations.⁵

Two of the most popular locations for maneuvers were Bruja Point—the future location of Howard AFB and Fort Kobbe—and Tocumen, where the international airport would later be built. The battalion troops would march out to the maneuver site, set



[3.05] Machine gun firing practice at the Fort Clayton Firing Range.



[3.06] Machete instruction showing the correct method of protecting the body when down. Machetes were a basic weapon of jungle troops.

up camp, and take field training for a week at a time. Service Company, 33rd Infantry, provided all the necessary logistical equipment. Using a combination of wagon train (for tents and cots) and pack train (mules carrying provisions) the Service Company would arrive before the troops and unload. After lunch with the troops they would return to Fort Clayton to replenish their supplies before heading out again the next morning [3.07, 3.08].⁶

Most of this training prepared the infantry soldiers for their primary mission—protecting the canal locks. In 1934 they got the opportunity to apply their training when military lock guards were instituted. Previously guarded by Canal Zone Police, the Gatun Locks were put under guard of 14th Infantry troops during 1934 maneuvers. The results were so impressive that on 6 April 1934 the Canal Zone Governor requested that the Panama Canal Department provide military guards at all locks and adjacent power plants. Military Lock Guard details were established, with one company of the 14th Infantry guarding at Gatun and one company of the 33rd Infantry guarding the Miraflores Locks, Pedro Miguel Locks, and the Miraflores power plant. Three Army officers were to be on duty. Serving with the Canal Zone Police, the military guards checked all military personnel entering the area and were charged to report any suspicious acts. The companies served 14-day tours of duty. The troops were originally housed in tents, but more permanent structures were built over the next few years.⁸



"The battalion troops rotated maneuver schedules; the 1st battalion, then the 2nd battalion, then the 3rd, then the regiment went out, so we in the pack and wagon trains were usually on the go."

James H. Sauer, Service Company, 33rd Infantry, 1926–1929⁷

[3.07] Troops of H Company, 33rd Infantry, returning from a 'field trip.'



[3.08] 2nd Field Artillery troops on maneuvers.

Life at Fort Clayton and in the Canal Zone

"My informant at this post states simply that: This is the best Infantry post on the Zone."

Charles J. Sullivan,
1926⁹

Fort Clayton was not only a place to work and train—it was a place to live. Soldiers had ample opportunity for recreation during free time, and the Army provided a number of facilities to support that. By 1925 the 1200 enlisted men and officers stationed at Fort Clayton had two tennis courts, a polo team and playing field (marked off the western end of Miller Field), and dayrooms equipped with pool tables and reading material. Mail arrived from and was sent to the United States about three times a week, with an approximate transit time of 6–10 days. There were monthly dances that rotated between Fort Clayton, Corozal, Fort Amador, and Quarry Heights Military Reservation, to which soldiers from all other posts were invited. Two golf courses were available for play on the Pacific side of the isthmus as well. The jungle-covered hills in the back part of Fort Clayton offered hiking and riding adventures for those so inclined [3.09, 3.10, 3.11, 3.12].¹⁰

The command encouraged athletic competition among the troops. In fact, there was a War Department policy "of holding an annual tournament in which cups, medals and



[3.09] The Panama City Carnival Queen watches a polo match with General Martin at Fort Clayton.



[3.10] A St. Patrick's Day Dance.



[3.11] A bride and groom ride on mules as they pass under crossed sabers.



[3.12] The tables are set for the 33rd Infantry's Christmas meal.

other trophies were awarded winning teams and individuals.¹¹ Competitive sports included baseball, track and field, boxing, horse shows, swimming, and tennis [3.13]. Elimination rounds were held at the various Canal Zone installations, ultimately

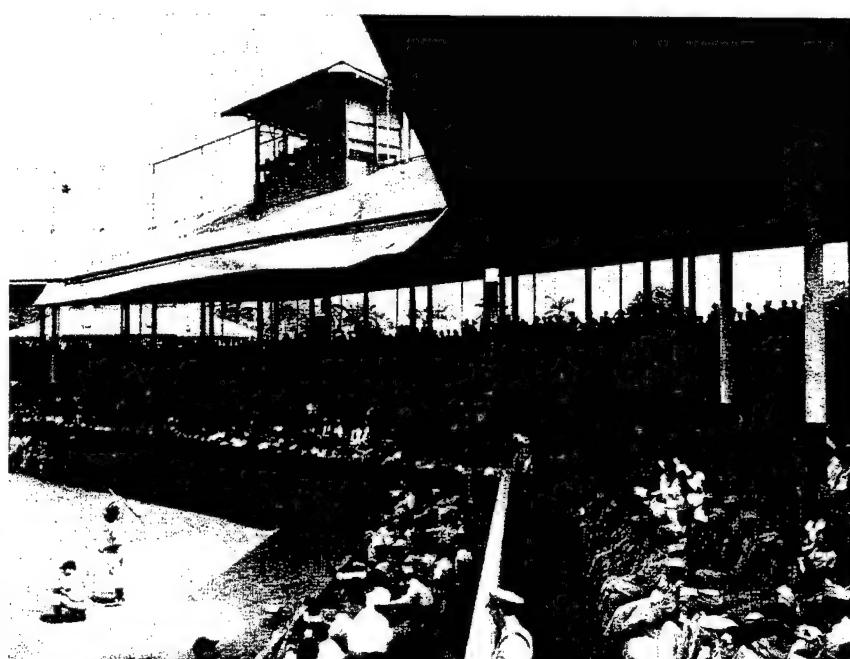
resulting in competition between the best of the Atlantic- and of the Pacific-sector teams for the title of Panama Canal Department Champion. Baseball teams found the tropical climate during the dry season to be a relief from the cold winters in

the United States, and held training camps and practice games in the Canal Zone. Exhibition games were often played against teams from various military installations [3.14]. The soldiers who worked with horses and mules held their own "horse shows," which combined elements from traditional horse shows and rodeos. The horse and mule teams would be fixed up and put through their paces to show off their excellent training.¹²

The 33rd Infantry Band provided entertainment for the troops at parades, reviews, and the always-popular baseball games as well as other sports events. Parades were held as part of Organization Day, usually in July. This self-invented holiday afforded an opportunity to participate in a costume parade on post. The band also played at special events in Balboa and Panama



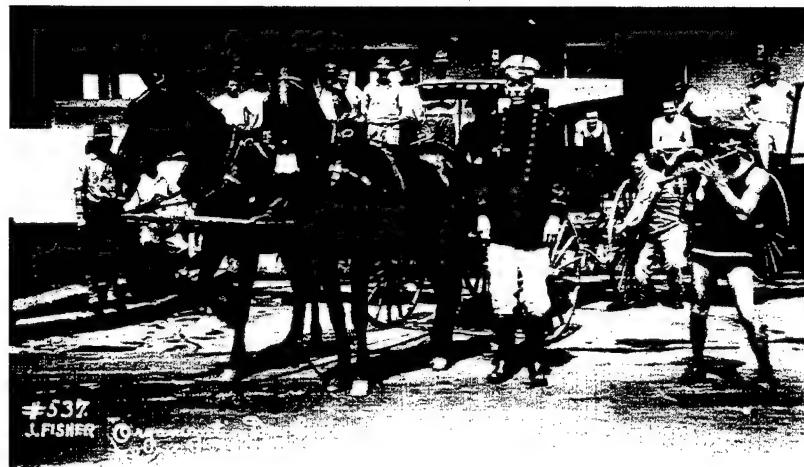
[3.13] The 1928 Canal Zone boxing champion hailed from Fort Clayton, and many of his fellow soldiers rode the train to Colon for the championship bout.



[3.14] Baseball enthusiasts watch a game between the Montreal Royals and the Army All-Stars at Balboa, Canal Zone, 14 March 1947.

City, such as Fourth of July and Panamanian Independence Day festivities [3.15, 3.16, 3.17].

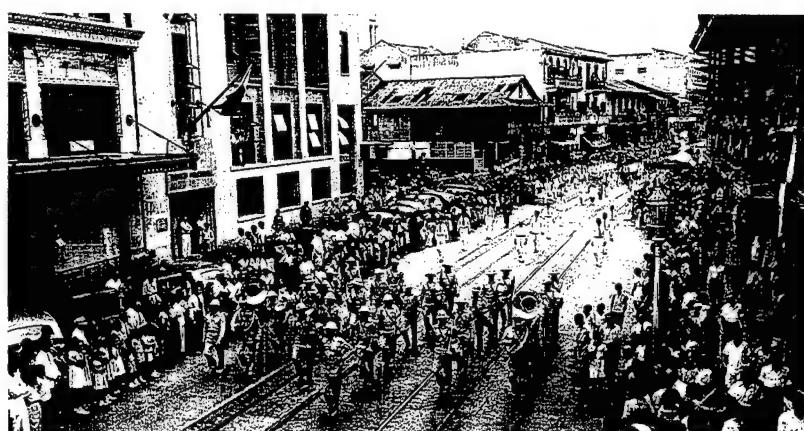
For recreational needs that could not be satisfied on post there was always the lure of nearby Panama City. In the capital city of the republic soldiers could shop for items not available on post, or enjoy a wider variety of food and drink, and take in exotic spectacles such as bullfights. During their first 3 months of duty in Panama, however, soldiers needed a pass to visit the city. Any soldier caught without a valid pass could be arrested by the military police and jailed overnight. During the 1920s and early 1930s, Prohibition was in force everywhere in the Canal Zone, including the military installations. However, the 18th Amendment of the U.S. Constitution was not applicable in the Republic of Panama. Occasionally the command would host parties outside the Canal Zone; a company of troops



[3.15] Preparing for the Organization Day Costume Parade at Fort Clayton, 6 July 1926.



[3.16] 33rd Infantry Organization Day program, 6 July 1940.



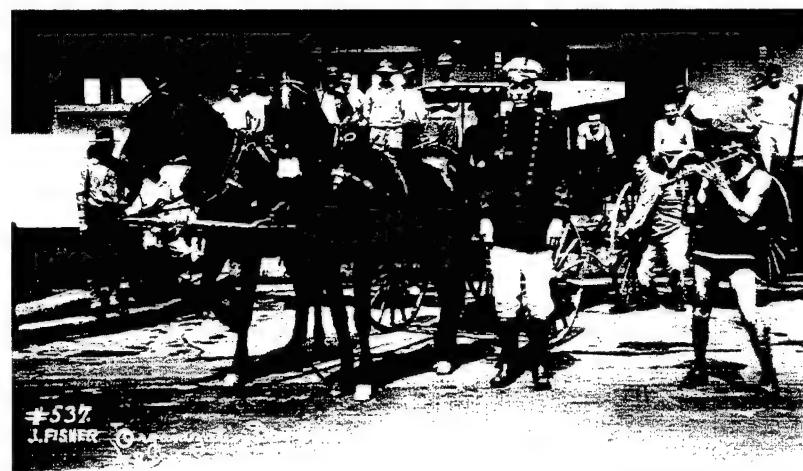
[3.17] U.S. Army band marches down Avenida Central in Panama City during Panamanian Independence Day parade, 4 November 1942.

"The closest, the most convenient and the most interesting place in which to do a tour of 'foreign service' is the Panama Canal Zone. The voyage, on an Army Transport from New Orleans, takes but five days . . ."

Journal of the United States Artillery, 1920¹⁴

City, such as Fourth of July and Panamanian Independence Day festivities [3.15, 3.16, 3.17].

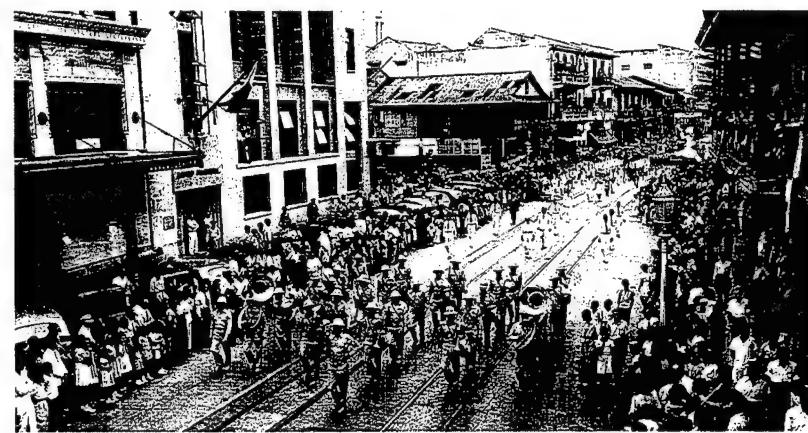
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[3.15] Preparing for the Organization Day Costume Parade at Fort Clayton, 6 July 1926.



[3.16] 33rd Infantry Organization Day program, 6 July 1940.



[3.17] U.S. Army band marches down Avenida Central in Panama City during Panamanian Independence Day parade, 4 November 1942.

"The closest, the most convenient and the most interesting place in which to do a tour of 'foreign service' is the Panama Canal Zone. The voyage, on an Army Transport from New Orleans, takes but five days . . ."

Journal of the United States Artillery, 1920¹⁴

would be taken to a beach in Panama where they would be treated to a picnic and beer.¹³ In addition to being a beer-drinker's haven, the Republic of Panama was also considered a sportsman's paradise, offering excellent hunting opportunities and world-class deep-sea fishing. Over the years, several beachfront and island hotels and resorts were developed to cater to American tastes [3.18, 3.19, 3.20].

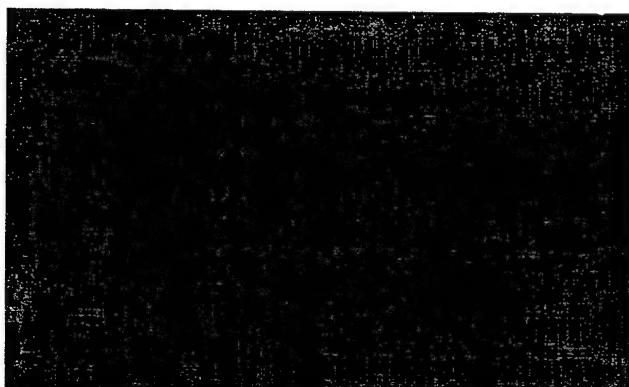
Soldiers' wives also loved to visit Panama City and Colon for the shops and availability of consumer goods. One of the most popular stores was The French Bazaar in Colon, originally opened for business in 1825, which sold hats, frocks,

shawls, jewelry, and perfumes. Another very popular store, located on Cathedral Square in Panama City next to the Hotel Central, was I. L. Maduro, Jr., which sold Panama hats, photographic film, Spanish mantillas, silk shawls, kimonos, curios, and souvenirs. These destinations and others offered military wives the opportunity to window shop at large, modern stores with expanses of plate glass providing an atmosphere reminiscent of an urban U.S. shopping district.¹⁵

On a Saturday the whole family might go on an outing to visit the Summit Botanical Garden. Not only could visitors stroll through the garden and admire an assortment of

rare tropical trees and plants, they could buy plants for their own yards. The Powell Orchid Garden, a branch of the Missouri Botanical Garden of St. Louis, Missouri, specialized in growing native orchids, including the Flor del Espíritu Santo (Holy Ghost) orchid—the national flower of Panama. Another popular day trip was to the Pacific island of Taboga, where families would picnic on the beach. Special occasions were often celebrated at the two U.S.-run hotels in Panama—the Tivoli Hotel in Ancon on the Pacific and the Hotel Washington in Colon on the Atlantic side.¹⁶

Panama City itself offered many sightseeing and holiday opportuni-



[3.18] Pass for entering Panama City.



[3.19] Crowd leaving the bull ring after a fight, Panama City.



[3.20] Soldiers relax at the Fort Kobbe Beach Club.

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in the World
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TONS



CRUISES to the

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Bermuda and the Spanish Main

by the S. S. MOLTKE (12,500
Tons), leaving New York JAN.
23, FEB. 25, MARCH 29,
1913, and S. S. VICTORIA
LOUISE (16,500 Tons), FEB.
8, MARCH 11, APRIL 10,
1913.

16 Days : : \$145 and up
21 Days : : \$160 and up
28 Days : : \$175 and up

SPECIAL SAILING

S.S. CINCINNATI (17,000 Tons)
29 Days from New York
February 1, 1913

also

TWO CRUISES

from New Orleans

JAN. 23 and FEB. 10

by S. S. Kronprinzessin Cecilie
(9,000 Tons)

16 DAYS : : \$125 UP

DELIGHTFUL CRUISE

Around the World

Sailing from San Francisco
FEBRUARY 6, 1913
by S. S. Cleveland
(17,000 Tons)

110 DAYS : : \$650 and up
including all necessary expenses
aboard and ashore.

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ATLAS SERVICE

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\$85.50

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Friday, TOURS from 7 to 22 days.

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ties. The old city of Panama (Panama Viejo) still existed in the form of ruins. The city, founded by Spanish colonists in 1519, was sacked by the English pirate Henry Morgan in 1671. The picturesque piles of stones slowly being engulfed by luxuriant vegetation provided an interesting spot to explore or to show off to visitors. The colonial section of Panama City contained the main cathedral and its associated plaza, a focal point for inhabitants and visitors alike. Visitors to this area could also see several other churches, the National Theater, and the Presidential Palace, the latter having been enlarged and restored in the early 1920s.¹⁷ Several holidays and fiestas were celebrated by Panamanians throughout the year. These usually took on the character of street festivals with parades, entertainment, and food vendors. The highlight of the year was Carnival, celebrated immediately before the Lenten season began. Continuing for several days, Carnival featured neighborhood

musical bands, parades led by the 'Carnival Queen' and her court, and lots of fancy costumes.¹⁸

The Panama Canal, often called the "Eighth Wonder of the World" was a popular tourist attraction in its own right. Even before the canal was completed tourists came in droves to witness part of the monumental undertaking. As early as 1913 cruise ships included stops at the Isthmus of Panama on their itineraries [3.21]. The relaxed atmosphere of the Canal Zone lured as visitors some of the most glamorous personalities of the day, including film stars such as Clark Gable and Carole Lombard, who visited frequently.

President Franklin D. Roosevelt, the Commander-In-Chief of U.S. military forces worldwide, paid a visit to the Canal Zone on 16 October 1935 [3.22, 3.23]. FDR disembarked from the U.S. Navy cruiser *Houston* at the Balboa piers and took an automobile tour of the Pacific side, leaving by way of Gaillard Highway for a visit to



[3.21] Hamburg-American Line advertisement.

[3.22] President Roosevelt and Panamanian dignitaries during an FDR visit to the isthmus.

Madden Dam. The President and his entourage returned via Fort Clayton, where they reviewed the Pacific-sector troops and were honored with a luncheon at the officers' club.

The Panama Canal's administration building also attracted tourists. The sheer bulk of this building was impressive, and its prominent location provided spectacular views of the Panama Canal and the town of Balboa. The building's interior boasted a rotunda decorated with murals depicting the canal's construction. Other art of a similar nature was also displayed in the building. A selection of 1913 lithographs by Joseph Pennel was exhibited in 1928. The lithographs depict



[3.23] Soldiers snap to attention as FDR passes during his automobile tour of Fort Clayton.

the Panama Canal at the various stages of completion. On the third floor of the building was a museum

featuring artifacts and documents related to the failed French attempt to build a canal.¹⁹

New Construction During the Early 1930s

Mission Realignments and Post Expansion

In 1930 some Army officials began to question whether the 1st Battalion, 2nd Field Artillery should continue to be deployed at Gatun. The battalion's headquarters in old canal construction buildings were run-down and considered beyond economical repair. Additionally, some wanted the battalion to be stationed permanently on the Pacific side of the canal. Soon the chain of command became aware of these issues and an effort was launched to find a suitable new home. During 1931 three alternative locations for the battalion were debated: Fort Amador, Fort Clayton, and a new post that would share the border between the Curundu Military Reservation and Albrook Field.

As arguments began to distill, it was determined that Fort Amador was already too crowded and too far away from the battalion's training areas. The Albrook link-up presented flight path hazards and difficult topography. The Fort Clayton location was favored by many because it still had large, undeveloped areas and was situated near jungle terrain, which would be useful for training purposes. Opponents of the Fort Clayton alternative suggested that the undeveloped area should be kept open for expansion of the landing field and the infantry target range. Supporters of the Fort Clayton alternative countered that expanding the landing field was of secondary importance due to the development of Albrook Air Field nearby, and that

relocating a target range would be much less expensive than creating utility services for a brand new post.²⁰ In the end it was decided that the battalion would be moved to Fort Clayton, and this decision led to the construction of a building that would become a landmark on the installation, and ultimately would serve as the new central core of the installation [3.24].

Funds for this project came from the War Department Army Housing Program, which had been appropriating money for housing construction at military bases since 1927. The field artillery battalion funds were earmarked for barracks and quarters. In the 1930 War Department Appropriation Bill a total of \$357,500 was set aside for barracks on the Curundu Military Reservation. The 1932 Bill provided an additional \$80,000 for NCO quarters and \$319,500 for officers' quarters.²¹

When the designs were finalized by the Quartermaster Corps Construction Service in early 1932, the project consisted of one battalion barracks, two four-family NCO quarters, 14 company officers' quarters, and all necessary utilities including sidewalks, fire hydrants, streetlights, and a transformer house. In addition, the frame officer's club (Building 38) and two garage sheds were moved to new locations.

The battalion barracks plan called for a massive building sited northwest of the original quadrangle with its rear facing Gaillard Avenue and its front opening onto a large, undeveloped grass field. This location would develop into one of the two main directions of expansion filled out by new construction at Fort Clayton over the subsequent five decades. The NCO quarters were placed on a line with the existing NCO quarters, with the two new buildings on the northwest end of the line. The other major direction of development was indicated by the location selected for the new officers' housing. The arc of officers' housing began near the original officers' housing area and stretched far to the north before curving back southward [3.25]. This choice of location for the officers' housing emphasized the rank of its occupants through proximity



[3.24] 2nd Field Artillery patch.



[3.25] The 1933 officers' quarters area with curving street and tropical vegetation.

to recreational facilities and its distance from the barracks, NCO quarters, and stables. The layout provided higher levels of privacy for commissioned officers because the buildings were all constructed on the same side of the street.

The large expanse of open land encircled by this line of houses, which included Miller Field, would evolve into the post's major recreation area. Known over the years as Jarman Field and the Fort Clayton Community Park, this open area would be the future site of a golf course, a driving range, a softball field, athletic courts, and a model airplane flying circle. The space has hosted community fairs and a variety of other special events.

New Residential Construction

Officer Housing

Contract Number W-61-QM-76 was awarded to the Winston Brothers Company of Minneapolis, Minnesota, on 25 August 1932 and work began on 7 September 1932. At times the work force included up to almost 400 laborers and artisans. All materials (except sand and stone) were imported from the United States. Like so many Army buildings in the Canal Zone, this new housing was constructed of hollow concrete block walls covered with stucco, concrete foundations and floors, and red tile roofs. The concrete blocks were manufactured on site. Except for some slight settling of the fill material on which the buildings were constructed, no difficulties were encountered during construction. By 12 September 1933, the project was completed at a cost of about \$580,000.²²

The first officers' quarters in this project were begun on 20 December 1932, and the last one was started 8 March 1933. All were completed by 12 September 1933 at a cost of just under \$12,000 each. The row of officers' quarters was sited with the front of the buildings facing the open area toward the quadrangle. A service road ran behind the row.

Buildings 72–85 were almost square, measuring 44 × 52.75 ft [3.26, 3.27, 3.28, 3.29, 3.30]. They were designed in a style that became known simply as "tropical" and displayed the defining features of U.S. military construction in Panama. The main living areas were raised one story on concrete pillars, and part of the space underneath was enclosed to provide servants' quarters and a storeroom. The remaining open area underneath was used as a parking space.

The entrance to the main living area was through a central door at the top of concrete steps, both in front and back. A wide verandah with louvered lower walls and large screened openings formed the exterior wall around the front of the quarters. A combination living room and dining room ran through the center of the house, with bedrooms and baths to each side. A third bedroom on one side was balanced by the kitchen on the other side. Swinging screened casement windows with slatted wooden openings were used throughout, except for the porch. The tile roofs were overhanging and low-pitched.

The only subsequent major modifications to these quarters were the enclosing of the porch and window replacement. The

[3.26] Company officers' quarters (Buildings 72-85) take shape, 25 May 1933.

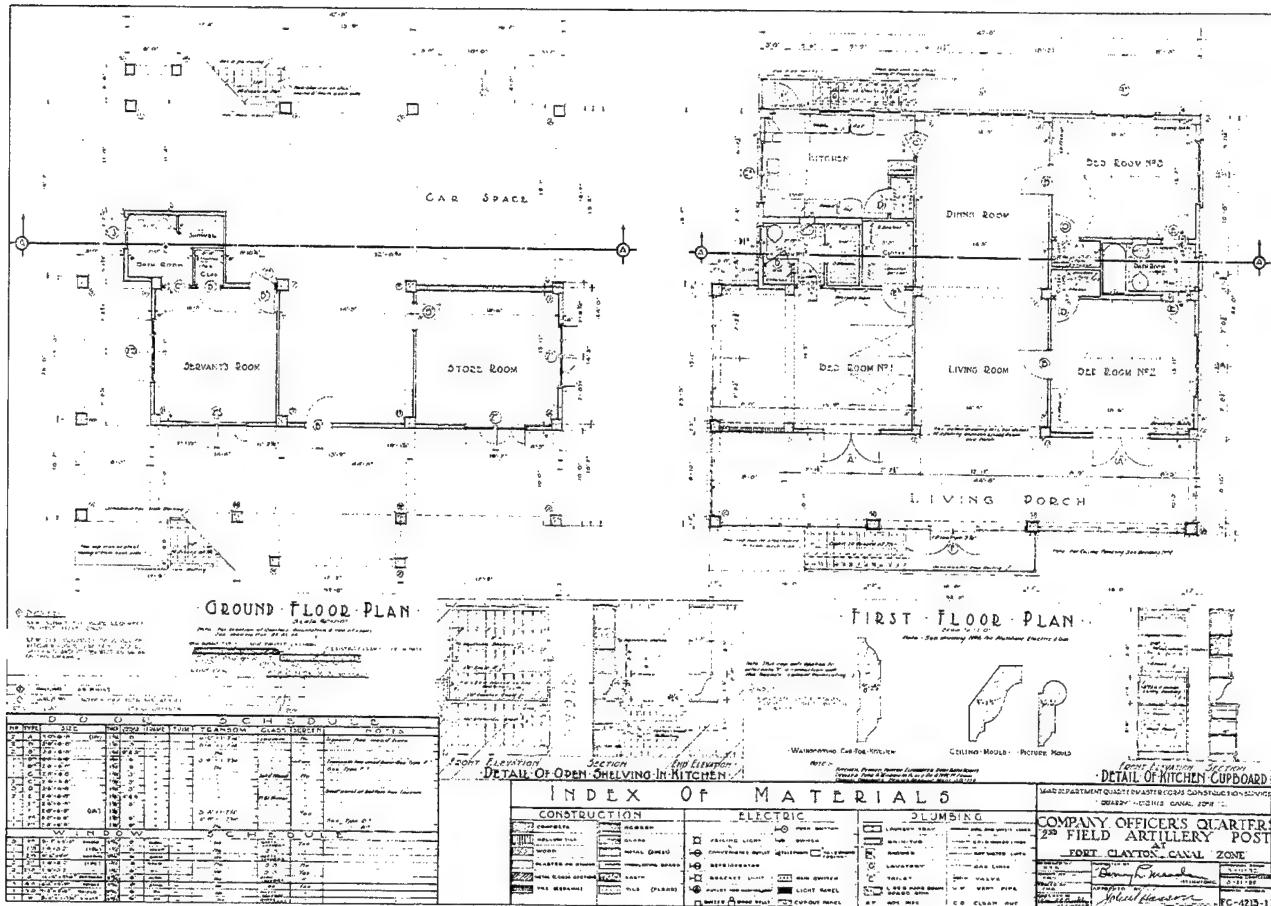


[3.27] Houses being erected in "Colonels' Row," Fort Clayton, 25 May 1933.

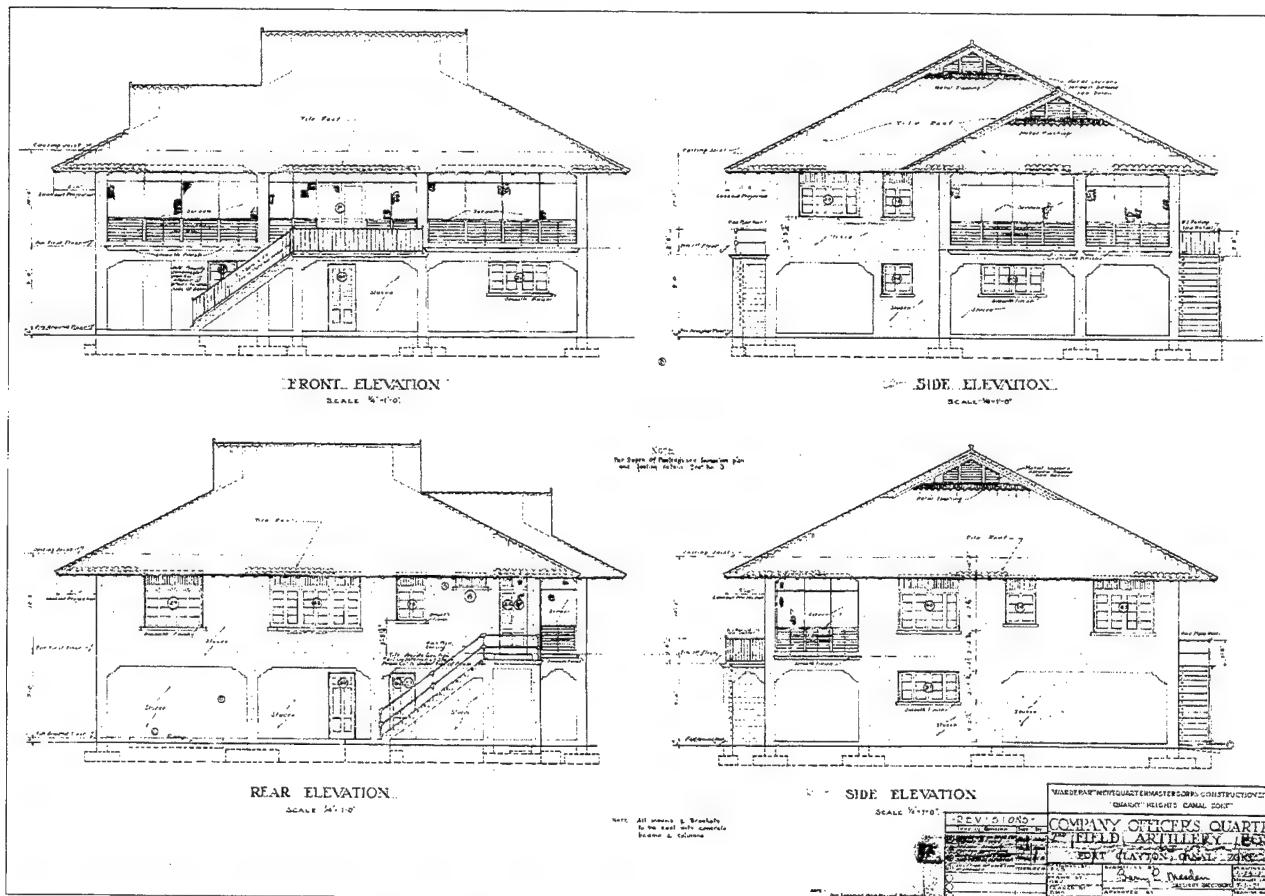


[3.28] Company officers' quarters.





[3.29] Floor plans for company officers' quarters, Buildings 72-85.



[3.30] Elevations for company officers' quarters, Buildings 72-85.

porches were enclosed sometime before 1968 with stucco masonry to match the existing walls. In 1968, the existing porch windows and door were removed and awning windows were installed. These windows functioned like jalousies except they were configured in three large glass panes that swung outward. Existing window air conditioning units were reinstalled. All windows in the non-porch areas underwent the same treatment in 1978. When central air conditioning was introduced in 1988, aluminum double-hung windows with heat-absorbing glass were installed. In 1991 security grilles were added to the ground-floor window openings as well as windows on the upper floor near points of entry. Buildings 72-85 remained in use as officers' quarters until Fort Clayton closed in 1999. All of these buildings were recategorized as field officers' quarters before the mid-1980s.

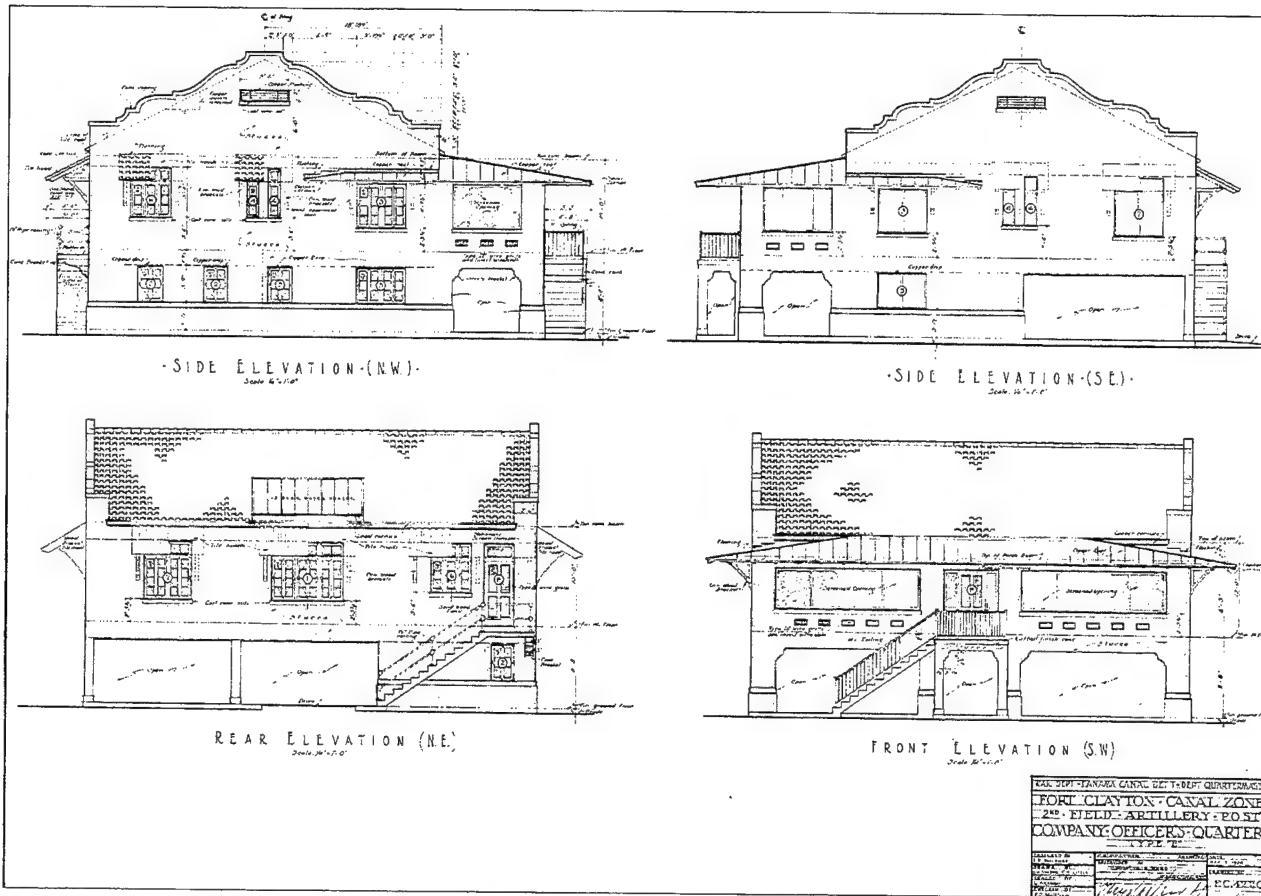
A second wave of officer housing construction proved necessary to accommodate the 2nd Field Artillery. In 1934 two field officers' quarters (Buildings 86 and 87) were constructed, oriented with rears to the street and sited to continue the line of officers' quarters built in 1933. Although conforming to the tropical design elements mentioned previously, these two buildings reflected the higher rank of their occupants through extra stylistic architecture and amenities.

The Panama City firm of Grebien y Martinz, Incorporated, won the contract on 20 June 1934. Funding for the project was allotted to the War Department through the National Industrial Recovery Act. Approximately 7 months later the construction project was completed at a cost of about \$18,000 per unit [3.31]. As with the other 2nd Field Artillery projects, construction materials were imported from the U.S. In this case, however, an exception was made for the roofing tiles: having asked for and received special dispensation from the Secretary of War, locally made tile was utilized.²³

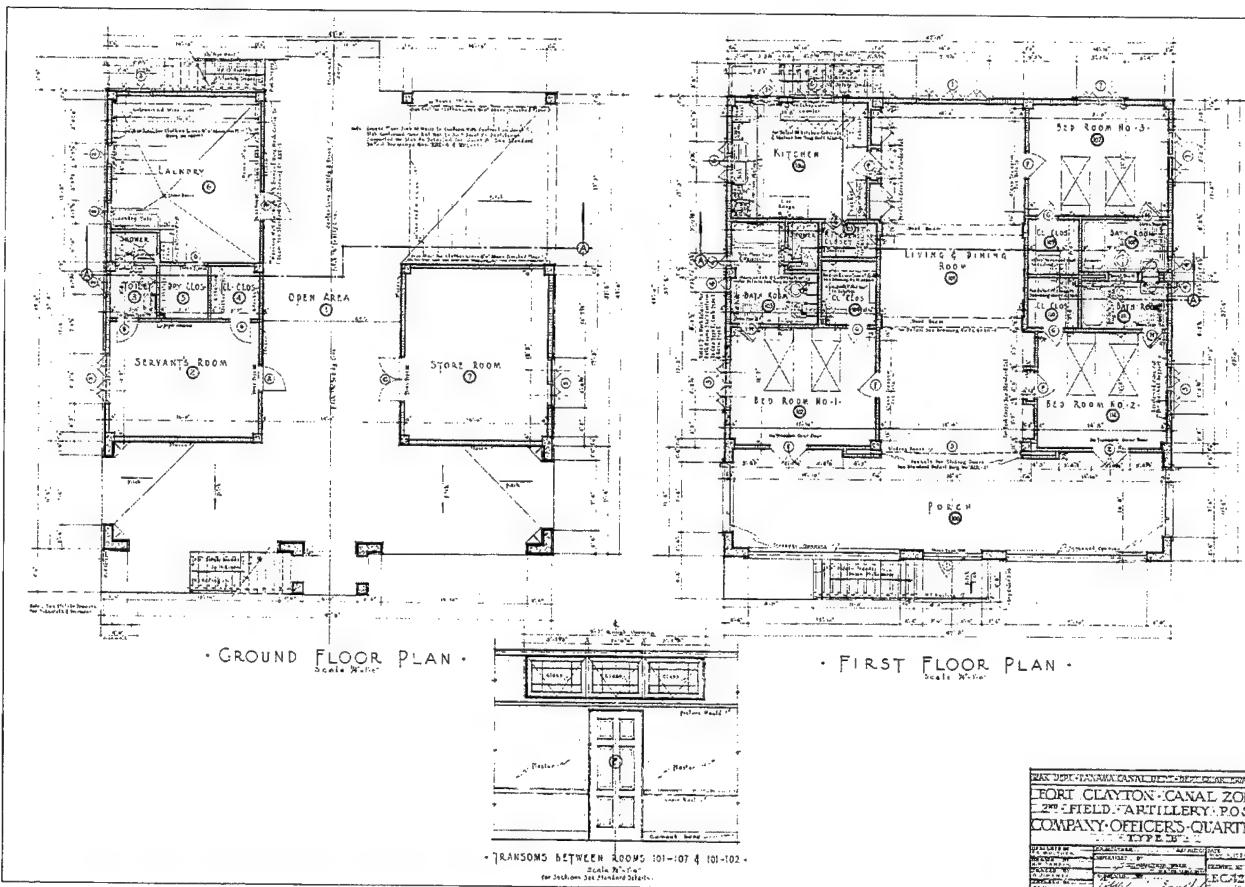
These two-story buildings measured 49 x 47.6 ft and had a wide verandah running along the front [3.32]. A series of small screened openings under the verandah

[3.31] Field officers' quarters (Buildings 86 and 87) two months after completion, 23 March 1935.





[3.32] Elevations for field officers' quarters, Buildings 86-87.



[3.33] Floor plans for field officers' quarters, Buildings 86-87.

screens helped to provide proper ventilation. Moderately pitched red clay tile gable roofs with wide, overhanging eaves capped the buildings, and mediaguas were employed as elsewhere on Fort Clayton. A copper roof extended over the verandah. Strategically placed interior transoms were used to enhance interior ventilation. This second wave of 1930s-era officers' quarters exhibited details characteristic of the Mission style of architecture, especially in the elaborately shaped parapets on either side of the roof and the cutout shapes of the concrete piers. Tile hoods protected the casement windows on the first floor.

The lower floor housed a servant's room with bath and closet (unusual) as well as an enclosed laundry room, dry closet, and storeroom [3.33]. The upper floor verandah entrance led through pocket doors into a central combined living and dining room. This area sported built-in bookcases and a china cabinet. The three bedrooms and kitchen were located to the sides. Each bedroom had its own bath—which was unusual for this type of building—and rather large, individual closets. The kitchen had plenty of windows, and was equipped with an electric range, refrigerator, and built-in cabinets. Glass transoms between the living area and two of the bedrooms enhanced interior ventilation.

The 1934 field officers' quarters were ultimately modified along the same lines as the other officers' quarters in the row. The screened openings were replaced with windows, and the windows were replaced again in 1987 with metal double-hung windows with heat-absorbing glass. Wire grille openings near the upper level finished floor line of the porch were removed and filled. In 1991, security grilles were added to the ground-floor window openings and those on the upper floor near points of entry.

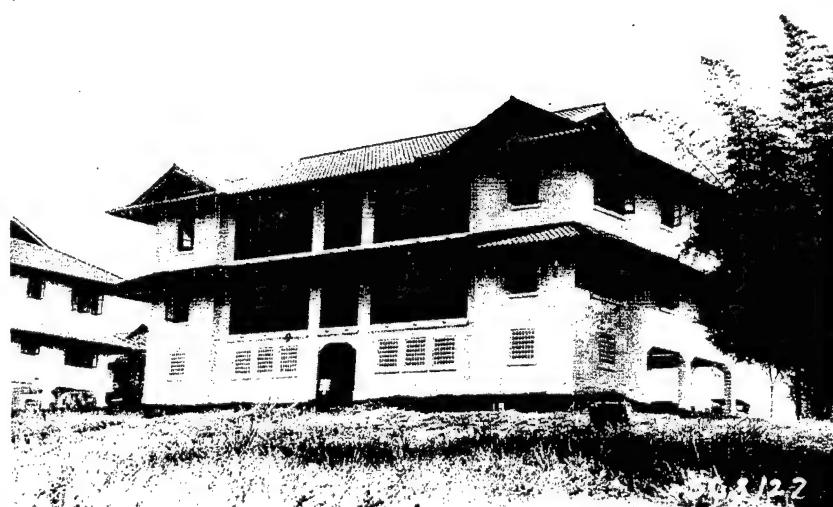
NCO Housing

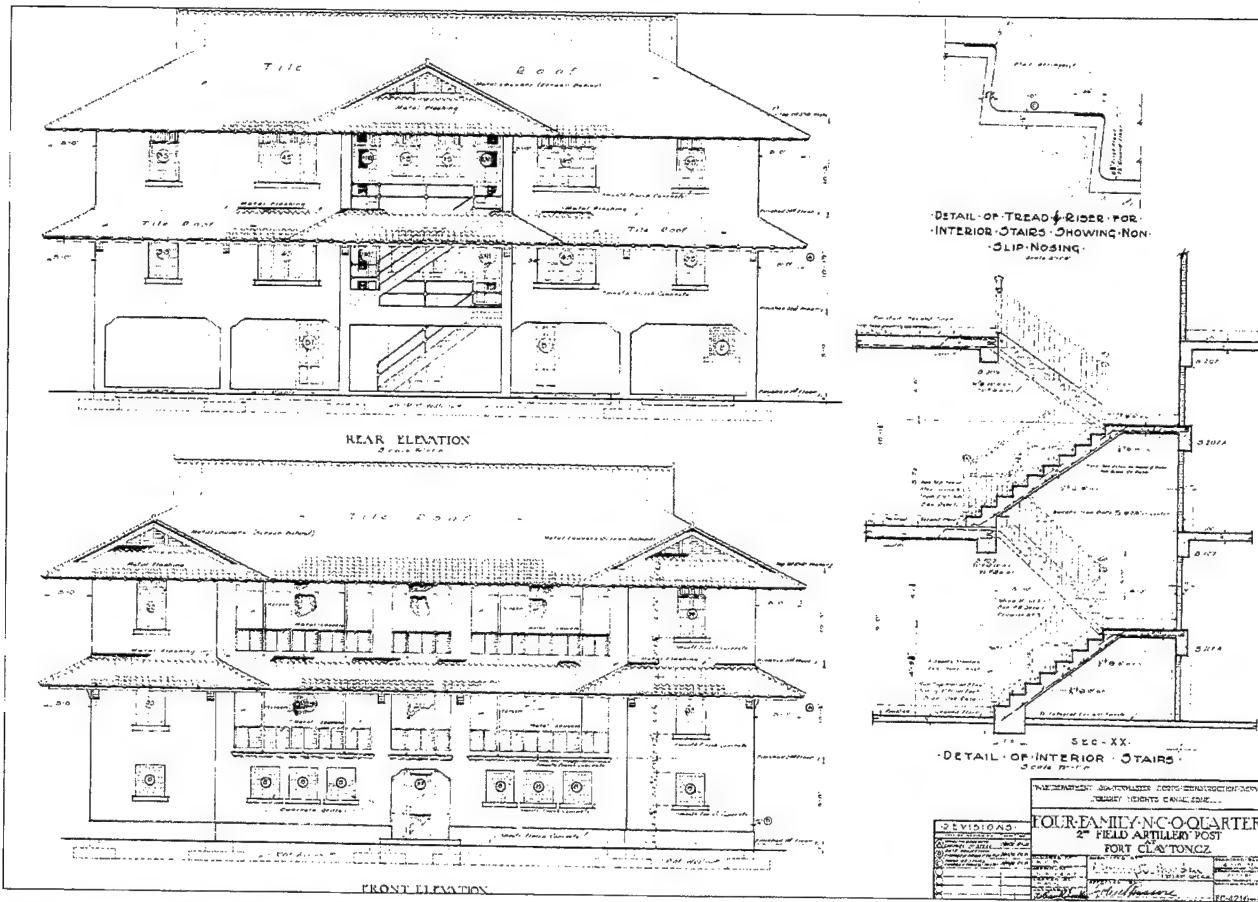
Construction of the four-family NCO quarters began on 7 December 1932 and was completed on 12 September 1933, at a cost of about \$30,400 each [3.34, 3.35, 3.36, 3.37]. These quarters were built under the same contract awarded to the Winston Brothers Company that included the officers' quarters and the battalion barracks. As with the officers' row, these quarters were sited with the rear of the building facing the street and the living areas overlooking an open expanse. Since the

[3.34] Concrete frame in place and roof construction underway on NCO quarters, Buildings 801–802, 25 May 1933.

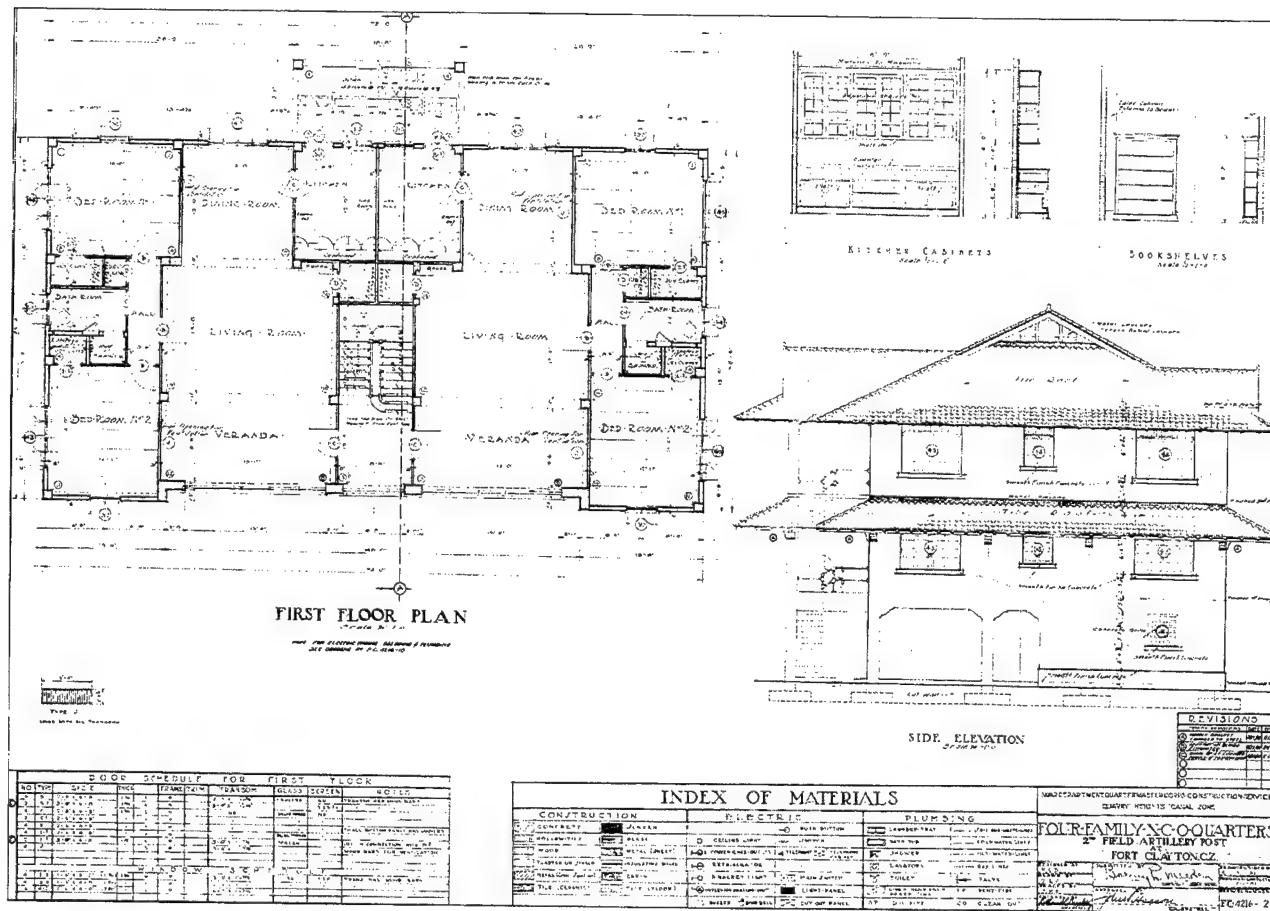


[3.35] NCO quarters, Buildings 800–801, 1941–1942.





[3.36] Elevations for NCO quarters, Buildings 800–801.



[3.37] First floor plan for NCO quarters, Buildings 800–801.

NCO quarters were on the edge of the post, residents could relax on the screened porch and take in a first-class view of the Panama Canal.

The rectangular buildings measured 38.75 x 72 ft. The usual tropical-style features were employed: raised living area, concrete frame construction with stucco hollow tile walls, Spanish tile roofs, mediaguas, casement windows, ventilation louvers, and large screened openings. Similar to the officers' quarters, the ground floor was primarily open for car parking, but part of the area underneath was enclosed to provide four storerooms—one for each family. The storeroom windows were covered with decorative concrete grilles. No servant's quarters were provided.

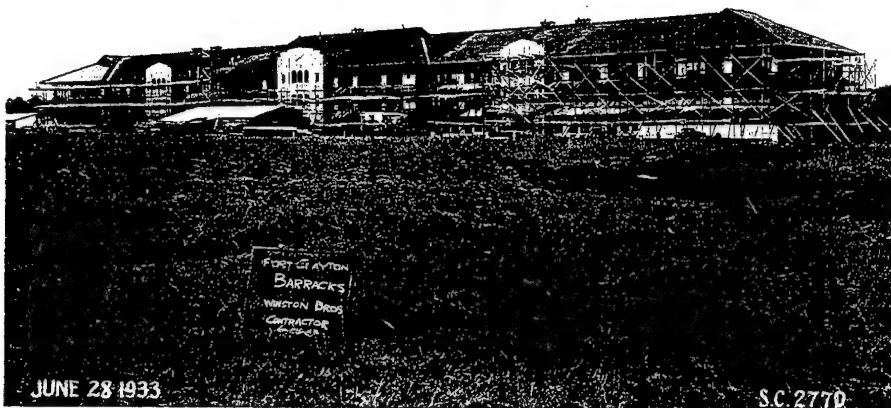
A ground floor entrance led to a set of interior stairs. Each of the four apartments had an open living room and dining room with a verandah running the width of both. There were two bedrooms on the side, each with its own dry closet. Each kitchen (off the dining room to the rear) was equipped with a gas range, electric refrigerator, and built-in cupboard. Exterior stairs led down from the kitchen to the parking area and street.

The exterior appearance of the quarters has been altered most by the replacement of windows. In 1955 the windows and screened openings on the verandah were replaced with jalousie windows. The metal louvers below the porch screens were removed and the area was filled in, reducing the exterior wall openings on the front façade. In most rooms the jalousies were made of opaque glass, but in the bedrooms they were aluminum. Windows were changed again in 1971, when aluminum framed awning windows were installed. These windows were slightly smaller than the ones they replaced, so more open area was lost. This was particularly true on the front of the building, where the large veranda openings were each divided in two and shortened. The newly created middle area became the location for a window air conditioning unit. In 1982 the laundry area on the ground floor was improved and surrounded with a decorative concrete block wall. Central air conditioning was installed in 1988.

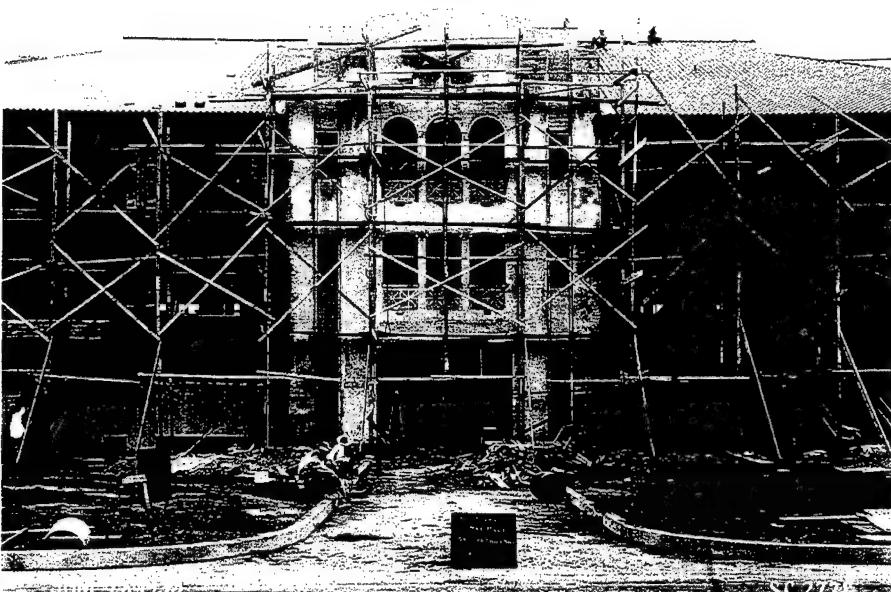
Battalion Barracks (Building 95)

The battalion barracks facility was started on 18 November 1932 and completed on 12 September 1933, at a cost of about \$260,000 [3.38, 3.39]. The large, three-story rectangular building was designed to accommodate four companies of field artillery personnel. The building measured 512.5 x 71.2 ft with two wings on the rear, each measuring 55 x 141.2 ft.

The south end of Building 95 housed Battery A; Battery B occupied the south-center area; Battery C was located in the north end; and the Headquarters (HQ) Battery was in the north-central area. These spaces provided housing for approximately 500



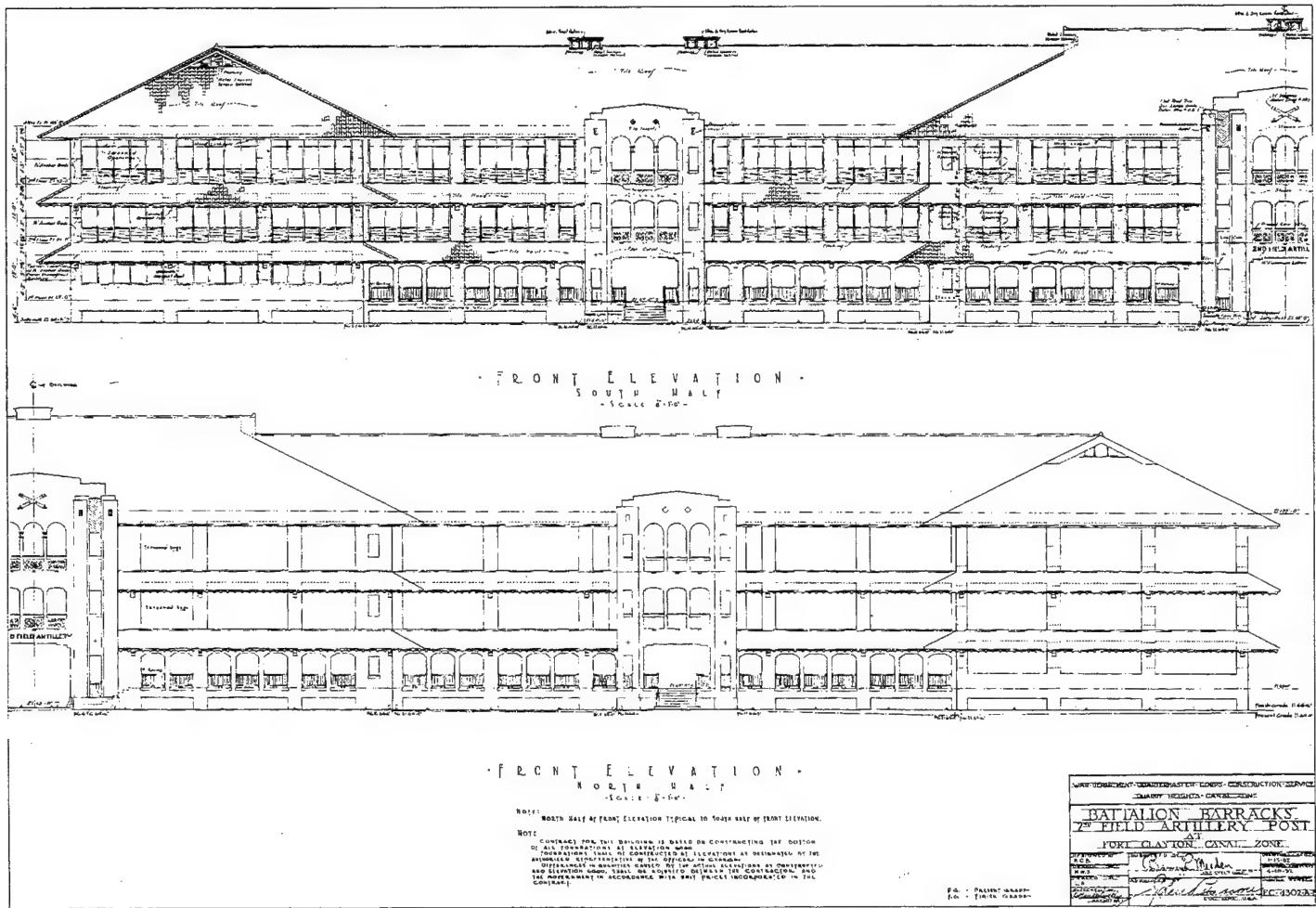
[3.38] Exterior walls of Building 95 under construction, 28 June 1933.



[3.39] Building 95 center sally port under construction, 28 June 1933.

enlisted men. Batteries A and C had their own entrances on the front façade, while Battery C and HQ Battery entered from the central sally port [3.40]. The walls of the building in the public areas of the first floor were made of concrete block to a height of only about 3.5 ft. Large screened openings comprised the remainder of the exterior wall, promoting a refreshing flow of air from the 9 ft wide passageway lining the front of the building. Wrought iron railings lined the edge of the passageway. The exterior walls of the second and third floors consisted of metal louvers for the lower third of the opening, with screens above to promote good ventilation for the upper floors.

Continuous mediaguas wrapped around the building above the first and second floor levels. The most distinctive features of the building were the battery entrances



[3.40] Front elevations, Building 95.

and the central sally port. The entrances were prominently decorated with immense stuccoed-concrete door surrounds that extended the full three stories to create a unifying element for the building. The center sally port decorative surround was repeated on the rear elevation. On the second and third floors, the surrounds provided loggias with decorative concrete block railings [3.41]. The legend "2nd FIELD ARTILLERY" was spelled out in 10 in. aluminum letters over the sally port [3.42].

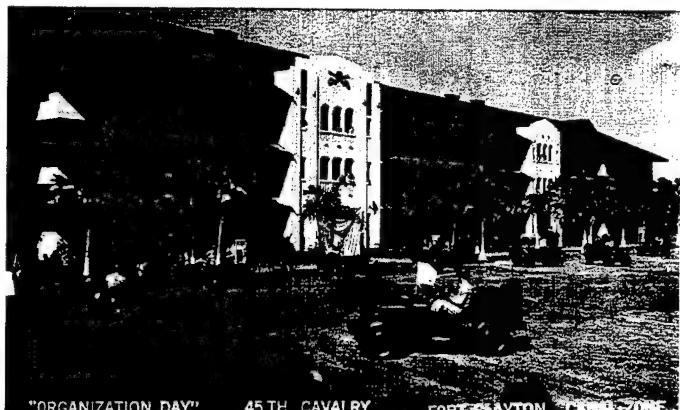
The interior layout of Building 95 was identical for Batteries A, B, and C. On the first floor, each had a mess hall, dayroom, and storeroom. Stairs led upward from each side of the dayroom. A series of smaller rooms was located to the side of the dayroom for use by the Battery Commanding Officer, the 1st Sergeant, tailor, and barber. The rear wings were placed across the partition walls separating the batteries and were directly off the mess halls. Each wing contained mirror halves for food service, with a serving room, utility room, kitchen, storeroom, refrigerator equipment room, cold storage room, mess sergeant room, and cooks' room. A loading platform ran across the back of each wing. The first floor of the HQ Battery had a slightly different layout: the mess hall was smaller and the tailor's room was eliminated; a headquarters office, office for the battalion commander, and an NCO room were added.



[3.41] Building 95 architectural detail.



[3.42] 2nd Field Artillery Inspection in front of Building 95.



[3.43] The 45th Cavalry celebrates Organization Day in front of Building 95, 1952.

The second and third floors were nearly identical for each battery, with open squad rooms for 60 men and three NCO rooms (except HQ Battery 2nd floor, which accommodated 58 men and 2 NCOs). The squad rooms contained the stairways. Each section of the upper floors also had a locker room and a dry room (larger version of the dry closet). On both floors, toilets were located in the rear wings over the kitchen areas. There were also four attic storage rooms.

In the 1940s Building 95 became home to the 45th Cavalry [3.43]. It continued to house troops until 1961, at which time utilization was changed radically and it was remodeled and converted into a community services center. (These major changes and later ones are discussed in their own historical context in later chapters.)

The open nature of the building gradually disappeared as air conditioning made its appearance in the Canal Zone. Reflecting changes that would eventually affect most of Fort Clayton's earlier buildings, the large screened openings were replaced with smaller windows. To accomplish this some of the extra window space had to be infilled with concrete masonry blocks; these were covered with stucco to match the existing walls. In many cases, however, the window openings were filled in completely. For Building 95, these changes took several decades to complete, starting in the 1960s and continuing into the 1980s. The reason for this pace of renovation was that interior areas were air conditioned piecemeal as the technology developed and as space utilization dictated. The most critical zones in the building were the first to be retrofitted with circulation ductwork. For Building 95 and many of the large buildings on post, cooled air was first provided in the early 1960s by compressors, evaporators, and air ducts. The necessary machinery was installed in several locations throughout

the building. Next, window-mounted units became affordable enough to install as needed to supplement the original system. In the early 1970s a chilled water system was installed, cooling indoor air via multiple chillers located around the building perimeter. Eventually this 1970s chiller system was supplanted by more centralized chiller plants purposefully built to serve several buildings at once. The progression through each of these systems was gradual, and 94 window units were still operating in Building 95 when, in 1980, the remote chiller system was installed.

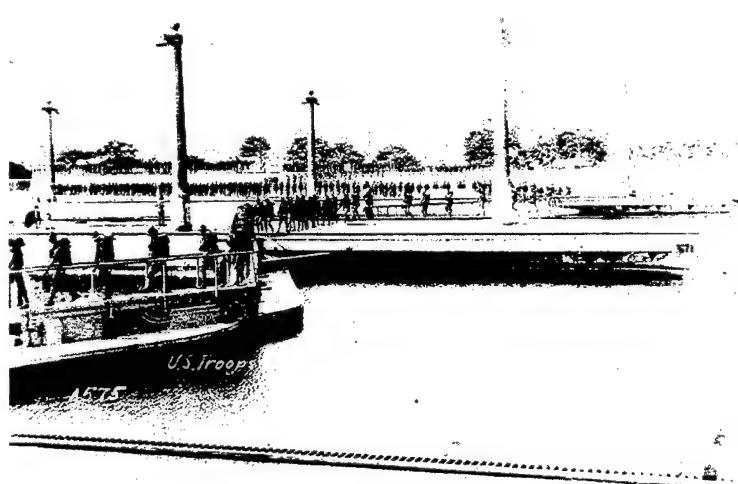
New Operations and Support Facilities

Stable Areas

In 1917, when fill material was being placed at the Miraflores dump for the anticipated construction of Fort Clayton, there were 286 private passenger automobiles in the Canal Zone. By 1921, even though there were 2113 automobiles and 392 motorcycles registered, there were few roads on which to drive them. The only modern way to cross the isthmus from Fort Clayton to her sister post, Fort Davis, was by railroad. Until 1930, when The Panama Canal established ferry service at Balboa, the only methods of crossing from one bank of the canal to the other were by boat or by walking across the tops of the canal lock gates [3.44, 3.45]. Pack mules were also walked across the lock gates to haul supplies.²⁴

By 1927 there were 848 horses and mules under the jurisdiction of the Panama Canal Department. Of those assigned to the 33rd Infantry and the 11th Engineers at Fort Clayton, there were 79 riding horses, 93 draft horses, 118 pack mules,

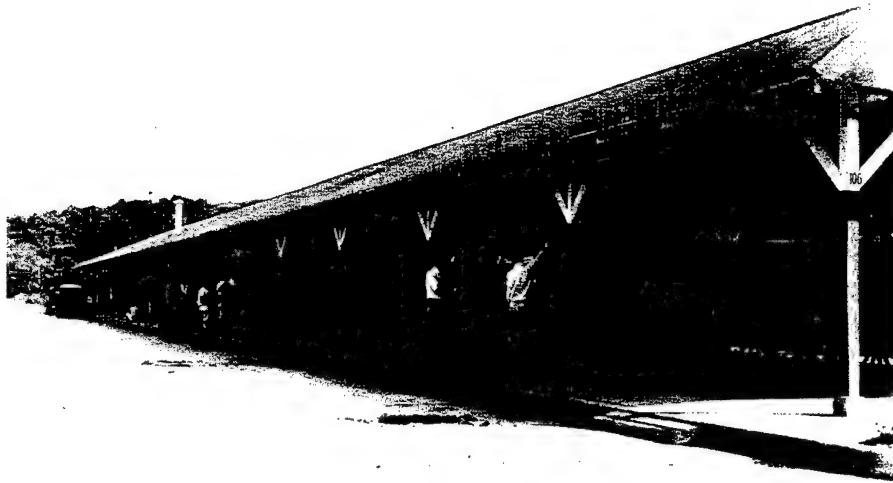
[3.44] U.S. forces crossing Miraflores Locks over a lock gate (c. 1928).



[3.45] U.S. troops at Miraflores Locks (c. 1928).



[3.46] Building 106, Field Artillery Equipment Shed for One Battery.



and 28 riding mules.²⁵ With notification that the 2nd Field Artillery Battalion would be arriving and stationed at Fort Clayton, a new stable area was designated for the battalion's pack animals and equipment. The stables and support buildings were constructed northwest of the original quadrangle and the 1-20 housing area. The field artillery stables included Buildings 102, 105, 108, and 111. The covered picket lines, which were similar in design and function to the stables, included Buildings 101, 104, 107, and 110. Support buildings for the 2nd Field Artillery stable area included four equipment sheds (Buildings 100, 103, 106, and 109) for storage of hay and fodder, bridles, saddles, tack, and other related equipment [3.46]. One equipment shed also included quarters for stable hands.

The contractor for the 2nd Field Artillery stable project was Navarro y Compañía, a local firm from Panama City. The selected site was an open grass field. The project was initiated on 28 March 1933 and was completed and accepted for use by the military on 3 November 1933. In addition to the construction of the stables and support buildings Navarro y Compañía built the utility infrastructure for the area, including one transformer house, streets, storm water drainage system, sanitary sewer system, water distribution and fire protection systems, and the adjoining electrical distribution system.

Between 1923 and 1935 a number of buildings were added to the 33rd Infantry stable area, but not all of these structures were related to the stables. The first buildings to be constructed were a rigging shed (Building 50), a blacksmith and woodshed (Building 51), a coal bin and loading platform (Building 56), compost pits (Building 58), a post storage house (Building 59), and a paint and oil storehouse (Building 125) [3.47, 3.48, 3.49, 3.50]. Building 51 was constructed from material salvaged from abandoned buildings at Camp Gaillard.²⁶ In addition to a blacksmith's shop the building included an officers' saddle room, an enlisted men's saddle room, a mechanic's shop, and toilets. These support buildings were similar in design and construction to the others in the 33rd Infantry stable area. Wood siding and sheet metal, both of which were inexpensive standard building materials for temporary



[3.47] Rigging line in Building 50, Rigging Shed. Note the Spanish yokes.

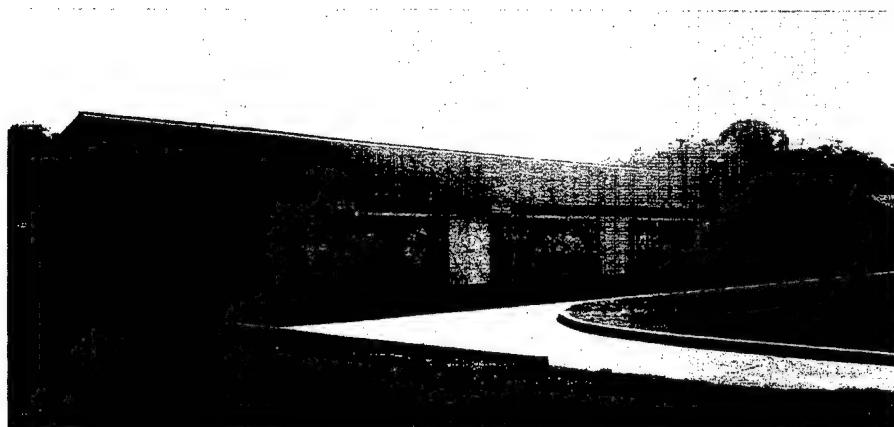
[3.48] Blacksmith and Woodshed, Building 51.



[3.49] Coal Bin and Loading Platform, Building 56.



[3.50] Post Storage House, Building 59.



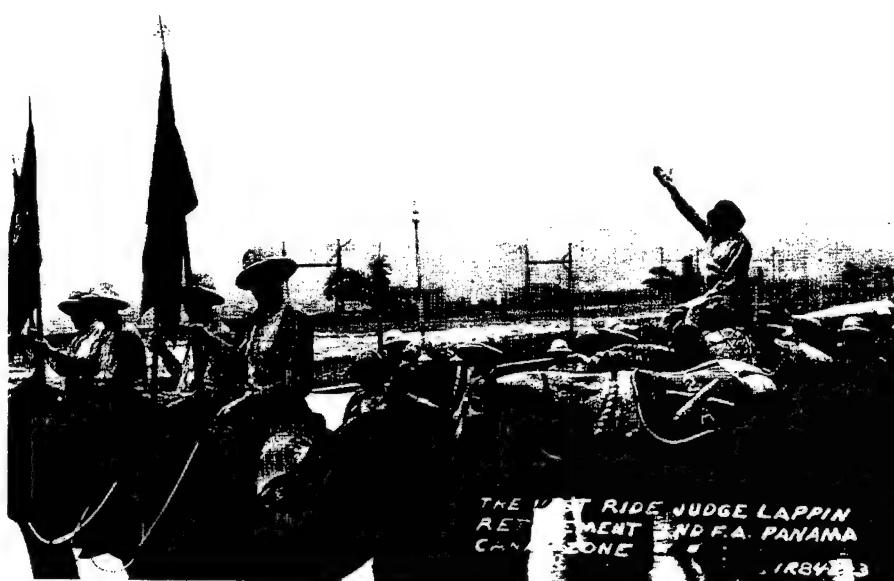
utility structures, were not expected to last more than 20 years. Often in buildings of this type the floors were no more than packed earth.

New stables built in this same area for the 33rd Infantry included a Panama Canal Department stable for 10 animals (Building 57), one stable building for 52 animals (Building 42), and 3 covered picket lines for 56 animals each (Buildings 60, 61, and 62). The PCD stable was constructed from salvaged material from Camp Gaillard; it included ten facing stalls divided by a central passage. In addition to the animal stalls the building contained a forage room, a harness room, latrines, and billeting for several men.²⁷

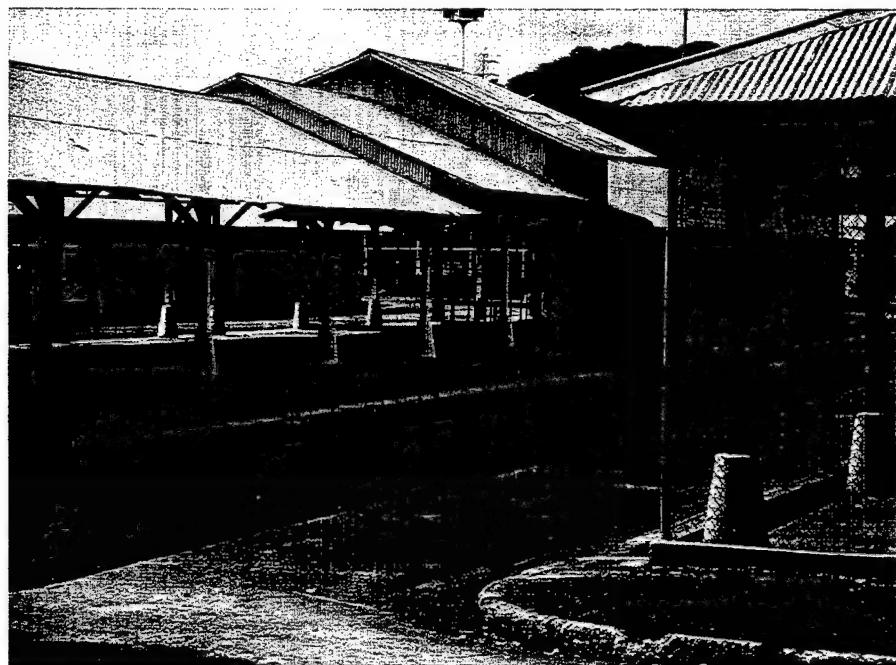
During the 1930s the infantry began to gradually replace horsepower with mechanized transport [3.51, 3.52]. There were no new stables constructed after those for the 2nd Field Artillery, and the last animals were transported off



[3.51] An attempt to mount mules with anti-aircraft machine guns—"the mules didn't like it." James H. Sauer, 2000.



[3.52] The 2nd Field Artillery prepares for a retiree's final ride.



[3.53] Motor Pool Buildings 100, 102, and 103.

of Fort Clayton in 1942. The area formerly occupied by the 2nd Field Artillery stables became the motor pool [3.53].²⁸ To adapt these buildings to motor pool use, various alterations were made in 1959, 1964, 1983, 1987, and 1995. These alterations were primarily made to enclose the space and to air condition parts of the buildings serving as tool rooms, storage rooms, dispatch offices, and classrooms.

Ordnance Storage Magazines

In 1930 six ordnance storage magazines, Buildings 64–69, were built at Fort Clayton [3.54]. These magazines were made of concrete and concrete block with galvanized iron roofs. Each had a steel door and an 18 in. roof ventilator for cooling the facility.

[3.54] Building 68, Ordnance Storage Magazine.



The buildings were located in a vacant area northeast of the 2nd Field Artillery stables, near the area where Quarters 307, 315, and 323 would be built. Both the need to build these magazines and the choice of location were the indirect result of a deadly 1926 fire at a New Jersey naval depot. In the aftermath of this disaster the 70th Congress set out formal requirements for the design and carrying capacity of Army and Navy ammunition storage areas, including specification of standoff distances between munitions storage and people. To store Fort Clayton's ordnance at a safe distance from people and other buildings, as specified by Congress, these new storage magazines were needed.²⁹

Miller Landing Field

On 29 March 1917 the first Army Air Corps personnel arrived on the isthmus. Designated the 7th Observation Squadron, two officer pilots and 51 enlisted men under the command of Captain H. H. "Hap" Arnold, the unit was stationed on the Atlantic side of the isthmus and used the Fort Sherman parade field as the runway for its two Curtis R-4 observation planes. In October 1917 work began on a permanent Canal Zone military airfield, which would be known as France Field. By 1925 France Field was home to the 6th Composite Group, composed of 577 officers, 623 enlisted men, and 38 airplanes.³⁰ According to Army Air Service Captain T. S. Voss, "the mission of the Army Air Force in the Canal Zone is to gain and maintain sufficient air superiority to secure the canal and its accessories against an air attack, to observe fire for the Coast and Field Artillery, to cooperate with the Infantry, to attack any enemy land or naval forces and to cooperate with the Navy in the execution of its mission."³¹

To support the mission of the 6th Composite Group, rudimentary landing fields were constructed at several military bases throughout the Canal Zone, including Coco Solo submarine base on the Atlantic side, and Fort Amador, Albrook Field, and Fort Clayton on the Pacific side. The landing field at Fort Clayton, sometimes called Miller Field, was located in the far northwest corner of the base through a corner of what would later become the main quadrangle and motor pool area.³² This field may have been functional as early as 7 March 1919, when a request was made by the Panama Canal Department to The Panama Canal to construct a "temporary shelter for an airplane at the southeastern end of the Miraflores Lake near the railroad tunnel."³³ The field was only used for emergencies, however, and planes were not normally present.³⁴

By 1928, the airfield at Fort Clayton included a U.S. All-Steel Hangar, a standard hangar design that was used at airfields throughout the United States [3.55, 3.56]. The hangar at Miller Field was prefabricated, and measured 66 ft in width, and 140 ft in length.³⁵ In 1929 Congress appropriated funds for the construction of a permanent Air Corps installation, Albrook Field, which was completed in 1931. After that, use of the facility at

[3.55] Hangar and planes at Fort Clayton's Miller Flying Field (c. 1927).





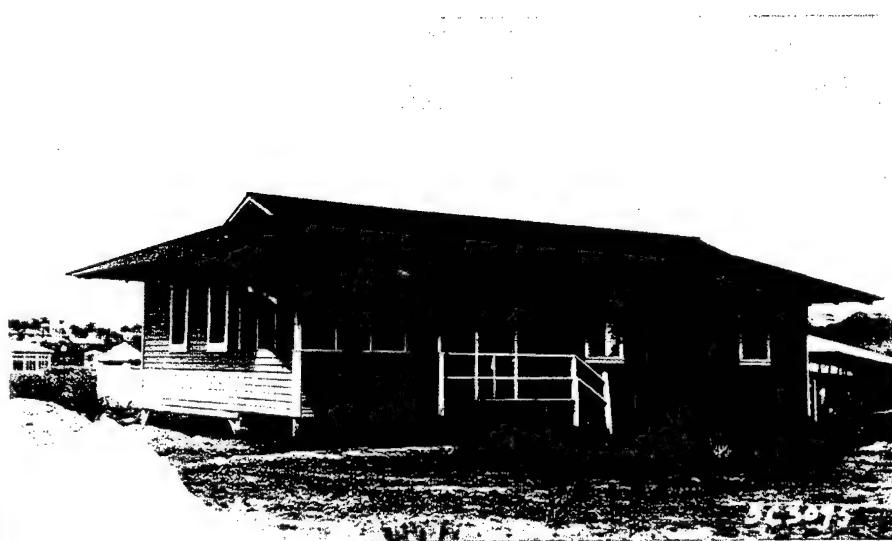
SC-1404

[3.56] Miller Flying Field consisted of a sod runway and a standard-design Army hangar.

Fort Clayton declined. The Miller Field runway was officially closed on 18 June 1932.³⁶ Construction of the 2nd Field Artillery stables at Fort Clayton required the removal of the hangar facility. In April 1933, Army Air Corps Brigadier General Westover recommended that some elements of the demountable hangar be dismantled and re-erected at Albrook Field. The hangar was dismantled and moved to Albrook on 11 April 1933.³⁷

Air Corps Barracks and Operations Building

The last of the operations support buildings to be constructed during this era was Building 63 [3.57]. Built in January 1929 as an Air Corps barracks and operations office, Building 63 was elevated 3 ft above ground as was typical of this early construction. The foundation consisted of concrete and wood posts, with wood floors and walls and a galvanized iron roof. A large barracks room took up most of the



[3.57] Building 63, Air Corps Barracks and Operations Office for 12 men.

floor space, which totaled 2180 sq ft.³⁸ The remainder of the floor space included a closet, lavatory, and an officers' room. There was a screened porch along the front of the building, with two open porches located on the side.

In June 1934 the building was moved 125 ft from the former emergency landing field to just southeast of Building 100 in the stable area. Minor alterations were made and a wing addition was built prior to its designation as the 2nd Field Artillery Supply Office and Stable Guard. Creosote was liberally applied to the wood members as a termite deterrent. The building included a guardroom, dormitory with toilet, unit supply office, and issue room.

Building 63 was demolished sometime after 1964. A library reading room had been added at some point during the building's service life, and its contents were moved to Building 95 before demolition.

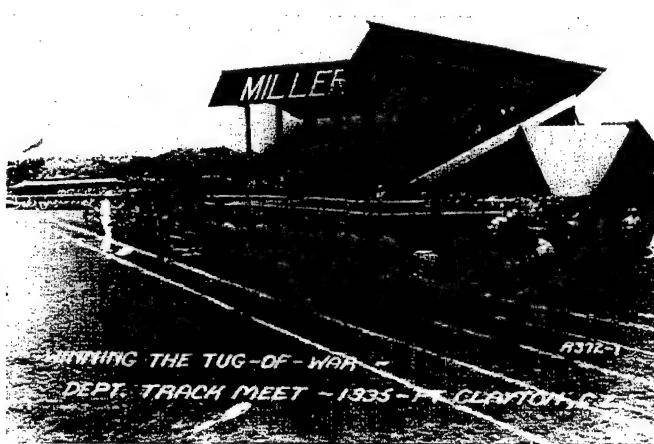
New Community Facilities

Miller Field Grandstand

The southeast area of the landing field became known as Miller Field, an athletic and recreation area. A grandstand with seating for 700 (Building 48) was constructed adjacent to the track circle in 1923 [3.58].

Other Athletic and Exercise Facilities

The command showed its support of athletics during this period by constructing a gymnasium, bowling alley, swimming pool, and later, a golf course. The first gymnasium (Building 52) built at Fort Clayton was completed in October 1925 [3.59]. Located immediately north of Quarters 10 on the corner of Hawkins Street and Stewart Loop, the 140 × 66 ft building was the second of the two U.S. All-Steel standard hangars erected at Fort Clayton.³⁹ The gymnasium included a large open area and boxing training room on the first floor. The partial second floor included squad



[3.58] Soldiers compete in tug o' war at a Panama Canal Department track meet at Miller Field, 1935.



[3.59] Building 52, Gymnasium, 1939.

room and storeroom. One year after the gym was completed, a bowling alley (Building 53) was built adjacent and attached to its northeast wall. The four-lane bowling alley included a seating space for the pinsetter 2 ft above the floor [3.60].

The bowling alley was replaced by Building 101 in 1943, and the gym was demolished and replaced in 1951.

In 1925 a swimming pool was constructed in the newly designated athletic and recreation area. The pool, designated Facility 55, was located on the opposite side of Hawkins Street, just southwest of the gymnasium [3.61].

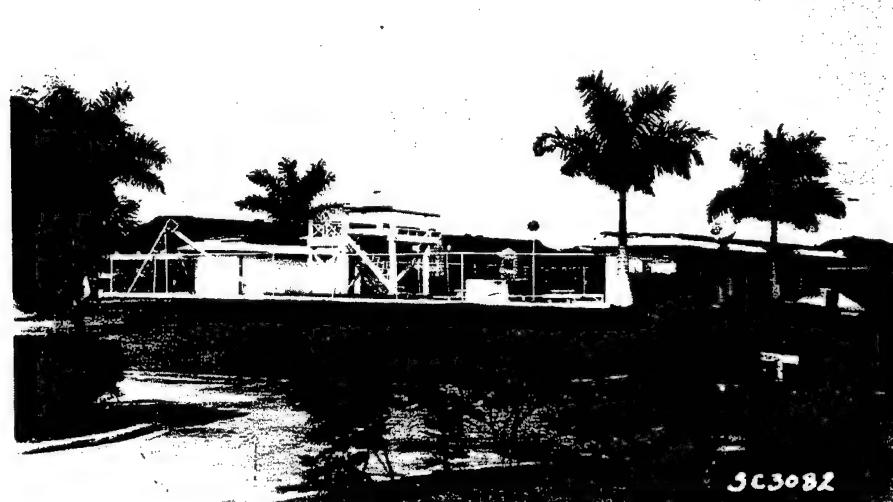
The swimming pool was replaced by Facility 452 in 1948.

The Fort Clayton golf course was created before 1941—probably in the late 1930s. The nine-hole course took up most of the open space between the original officers' quarters and outward arc of the officers' quarters built in 1933. A ball field and

[3.60] Bowling alley in front of the adjoining gymnasium.



[3.61] Fort Clayton's first swimming pool.



grandstand utilized the far northwest part of the open area, and a tennis court was located near the end of the line of 1933 officer housing.

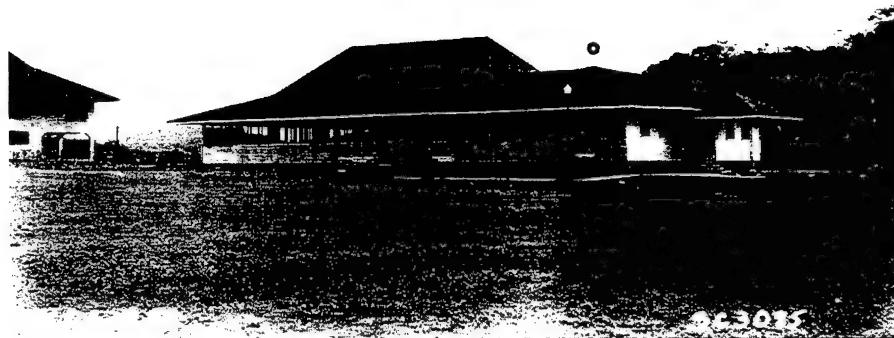
A golf clubhouse (Building 167) was built by 1949, prior to which a hutment and shed had served as shelter. A water distribution system for the course was put in place about the same time, and several drainage ditches were dug. A driving range was also built during this time.

This configuration of open area lasted for about three decades with some minor changes. In April 1968 a model airplane flying field was built in the park. The half-circle flying circle was enclosed within a 4 ft chain-link fence. The center circular concrete slab was 10 ft in diameter, and ringed by a grassy area, which in turn was enclosed by a 6 ft concrete circle. The total radius of the flying field was 62 ft. The golf course was officially disposed of in 1975 by order of the Commander, 193rd Infantry Brigade, but was not actually razed until 1983. The driving range remained, but was moved slightly to the east. The southern part of the open area, now named the Fort Clayton Community Park, contained a playground and a circular arrangement of five bohios (thatched huts of an indigenous style) for recreational use. The former golf clubhouse had been converted into an officer's club for junior officers and later became a teen club for military dependents. A large parking lot had been built next to Jarman Field. The park also contained a junior league field, softball field, rugby field, athletic court, and tennis court. A sidewalk/jogging trail curved around through most of the area. Over the next 10 years, a soccer field, basketball court, fitness trail, and more ball fields were added. The final element of the Fort Clayton Community Park was a jump tower (Facility 173) installed across the street from the Fort Clayton Elementary School (Building 129) in the 1990s.

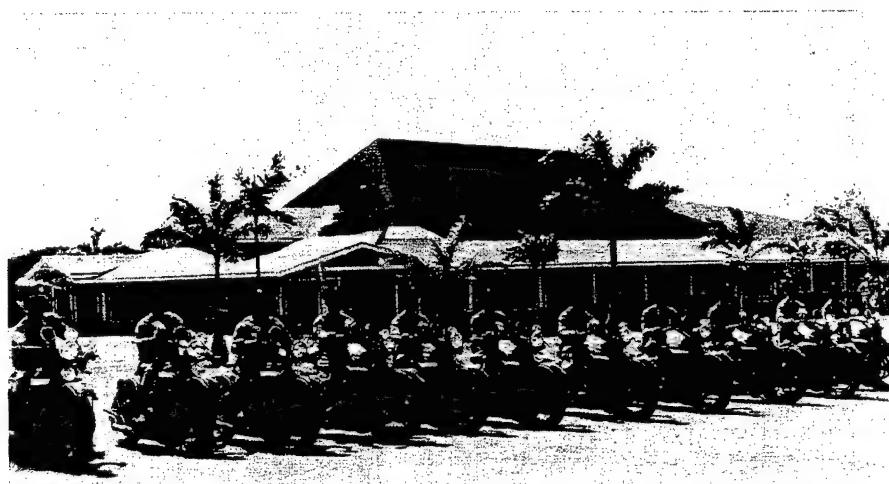
New Officers' Club (Building 38)

As discussed previously, the athletic and recreation schoolhouse (Building 40) had been used as an officers' club since 1925. In March 1928 the Commanding Officer of Fort Clayton requested permission from the Commanding General of the Panama Canal Department to construct an "assembly room" (an officers' club) on the post due to the unsuitability of the schoolhouse location.⁴⁰ Permission was granted, and construction of the new building was begun on 8 June 1928 and completed on 10 June 1929.

The Fort Clayton Officers' Club was a wood-sided building with an asbestos shingle roof [3.62, 3.63]. Enlisted personnel from Fort Clayton provided construction labor.



[3.62] Fort Clayton Officers' Club, Building 38.



[3.63] The Fort Clayton Military Police motorcycle patrol in front of Officers' Club.

The main building measured 112 × 55 ft, and an 11 × 12 ft wing was added in October 1933. The wing served as private quarters for employees of the club. In 1933 the floor plan of the club included an octagonal foyer, a reading room, two servants' rooms, a refreshment room, and a ballroom with an adjacent orchestra pit.

The officers' club at Fort Clayton was demolished around 1980 and not replaced.

Enlisted Men's Service Club (Building 39)

The emphasis on recreation activities and facilities in the Canal Zone dated back to 1906 when President Theodore Roosevelt appointed a group of Army chaplains to organize and execute a morale program on the isthmus. This tasking, for which the chaplains received \$100 per month, involved traveling "from community to community encouraging the organization of social and athletic groups and teams."⁴¹ In 1914 The Panama Canal's Bureau of Clubs and Playgrounds took the lead in managing recreational facilities when they began constructing Young Men's Christian

Association (YMCA) buildings for the use of their civilian employees as well as for military personnel. A number of YMCA 'huts' were erected solely for military use during World War I. These facilities were all of temporary wood frame construction, and few survived past the mid-1920s.

By 1925 the Panama Canal Department had taken full responsibility for providing recreation and entertainment for its troops. The command established the Morale Organization, under which were placed the Department of Motion Picture Services and the Department of Recreation and Welfare. The first permanent recreational building to be constructed for the enlisted men at Fort Clayton was Building 39, originally identified as the "service club."

In November 1933 the Commanding General, PCD, requested permission from the Chief of Staff to construct a permanent service club at Fort Clayton using PX funds. Permission was granted, the project was announced, and bids were taken.⁴²

The architectural and utility design contract was awarded to the local firm of Wright and Schay, Architects.⁴³ Gustav Schay, the primary architect for the project, had incorporated elements of Peruvian, Spanish, and South American architecture and adapted them to the tropical climate of Panama, and this hybrid became known as the Bellavistino Style of architecture.⁴⁴ It was the Bellavistino Style that Schay also chose for Building 39 [3.64, 3.65, 3.66]. The style is identifiable by its asymmetrical massing, multiple rooflines, round arches supported by piers, and decorative grille work. Building materials are typically white plaster or stucco exterior walls, clay tile roof, and a distinctive combination of stone and red brick at the base of the building. For the construction of the service club, the stonework included dark gray basaltic stone from Cantera el Cangrejo, Panama, and light brown rhyolite stone from Ancon Hill, Canal Zone. The straight barrel Mission roofing tile was manufactured by Grebien y Martinz, the Panamanian firm that won the construction contract. Construction began on 10 July 1934.⁴⁵



[3.64] "El Rancho" beer garden, Panama City.



[3.65] Street view (front) of Service Club, Building 39.



[3.66] Rear beer garden, Building 39, 1939.

Located in the recreation area immediately northwest of the swimming pool, the service club was alternately referred to as a "beer garden and restaurant." The original floor plan comprised the aforementioned large open beer garden and restaurant, including a bar, kitchen, hall, storage room, office, and restrooms. The beer garden and restaurant were officially opened on 1 November 1934. The initial construction cost was about \$15,500. In October 1937 a 42 x 60 ft rear wing, also designed by Wright and Schay, was added to the building.

Building 39 underwent periodic minor rehabilitations and modifications and several changes in designation. In July 1952 it became a PX restaurant and beer garden, and by 1968 it was used as a teen club with a bandstand and game room. Finally, Building 39 served as a day care center until its transfer to the Republic of Panama, at which time it was valued at over \$515,000.

Theater With Stage

Motion pictures were the major form of entertainment on post, and they were screened almost every evening. The auditorium in the HQ building (Building 21) provided seating for 150 to 200 people. During the 1920s, most featured films were silent, with no musical accompaniment. In the late 1920s, films with sound began to be played.

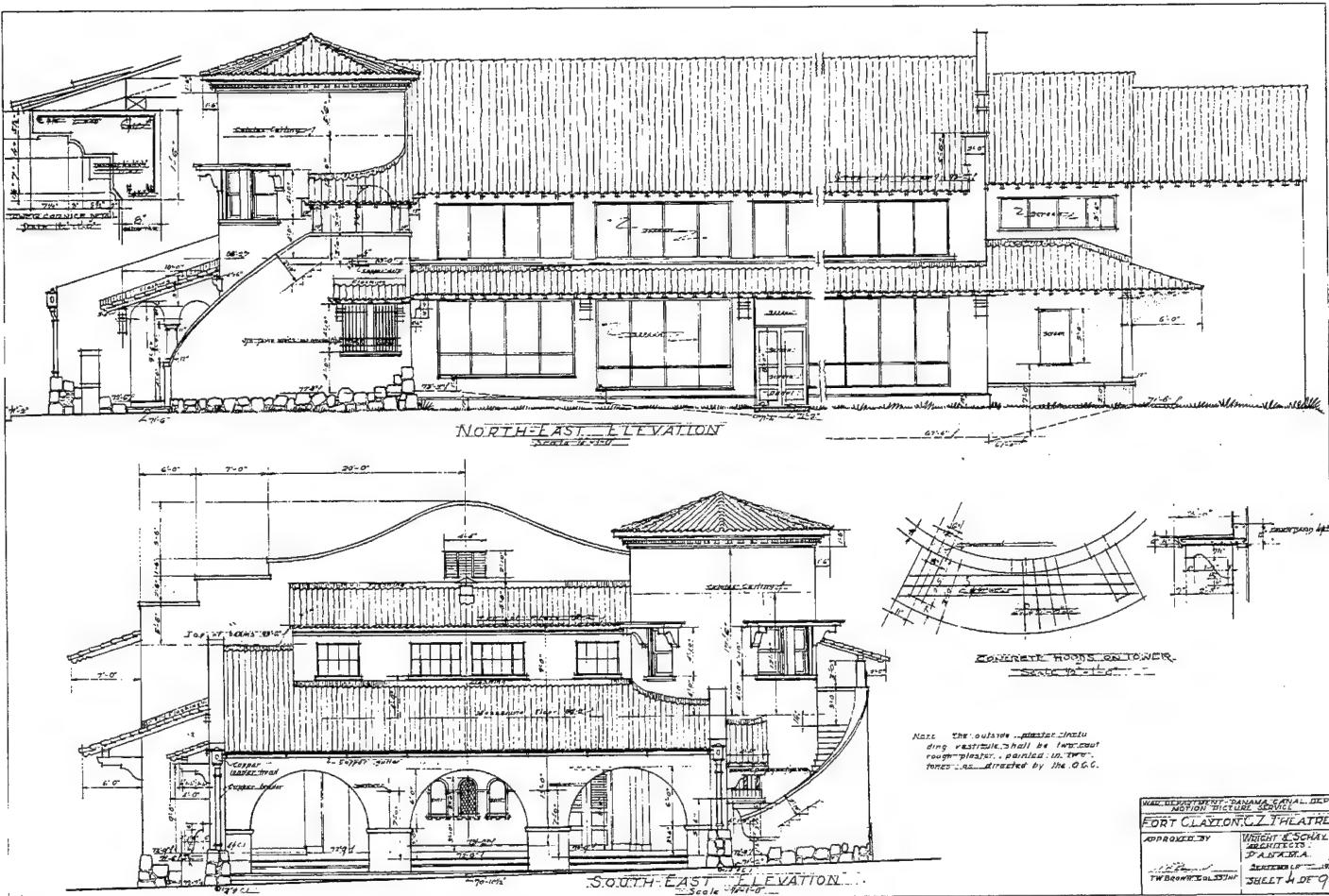
On 23 May 1933 Lieutenant Colonel H. D. Selton, Commander of the 33rd Infantry, requested authority from the Adjutant General to construct a movie theater at Fort Clayton. Selton justified his request by stating that "the building of a theater at this post is imperative, due to the fact that the present theater is in the Administration Building and will not seat the attendance when the Second Field Artillery now at Gatun moves to Fort Clayton for station, on or about August 1933."⁴⁶ The Commanding General, PCD, recommended approval and the Secretary of War concurred. Financing for the project was provided in the amount of \$40,000, appropriated from the PCD motion picture fund.

The design for the theater, which would "be architecturally in harmony with the new barracks at Fort Clayton," was executed by Wright and Schay.⁴⁷ A call for bids went out, and the responses were opened in late November.⁴⁸ Grebien y Martinz won the construction contract, and Building 49 was completed on 17 April 1935, at a total cost of just over \$42,000 [3.67, 3.68].

Gustav Schay designed Building 49 in his distinctive Bellavistino Style. Like Building 39, the theater displays multiple rooflines, round arches supported by piers in the front of the building, and decorative grille work. Unlike the service club, but typical of the style, the theater also has a tower. Original building materials included white plastered exterior walls, straight barrel Mission clay tile roof, and the characteristic Bellavistino combination of stone and red brick at the base of the building. Seating capacity at the time of construction was 1090. Original equipment included RCA



[3.67] Building 49, Fort Clayton Theatre.



[3.68] Northeast elevation of Theater (30 September 1934).

Victor sound equipment, Super Simplex projectors manufactured by the International Projector Corporation of New York City, and seats produced by the American Seating Company.

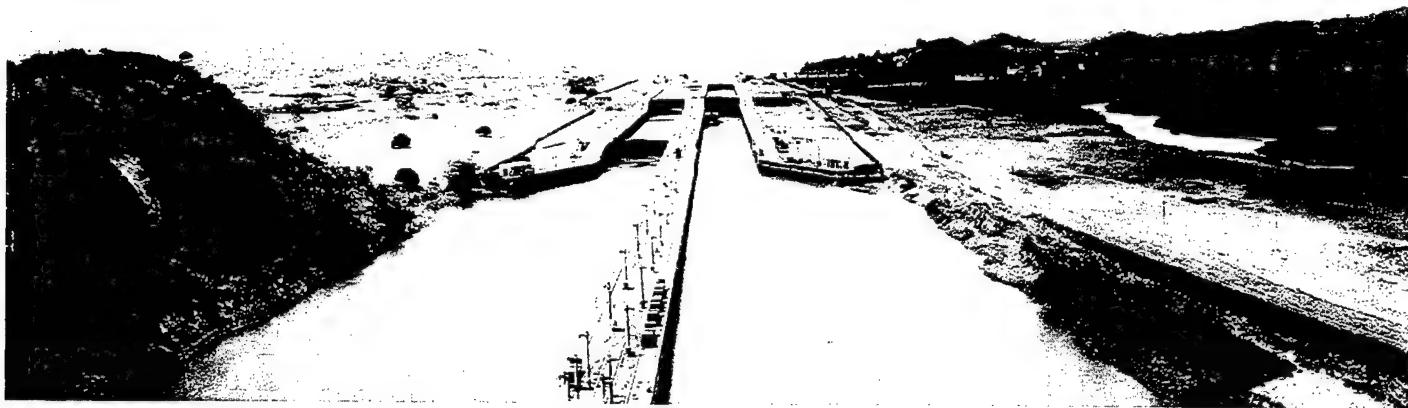
In 1954, the original large screen windows on the side elevations were removed and solid walls constructed to accommodate air conditioning [3.69]. A marquee was added to the front of the theater in 1957, and in 1971 alterations were made to the lobby area. Major repairs were made to the building in 1985.

World Shrinks, Insecurity Grows

By the mid-1930s advances in naval aviation (primarily aircraft carriers) and increasingly long-range bombers had in effect made Canal Zone air defenses obsolete. A growing sense of insecurity about Canal Zone defenses was made more urgent as dictatorships in both the eastern and western hemispheres became increasingly belligerent and expansionistic. The clouds of war were thickening across the seas—two oceans that had been knitted into one by the Panama Canal [3.70].

[3.69] Theatre #1 undergoing rehabilitation for air conditioning (c. 1954).





[3.70] Panoramic view of Fort Clayton and Miraflores Locks, 1936.

Notes for Chapter 3

1 Goodwin, *Historic Context*, Vol. I, 75–77, 207–208.

2 Panama Canal Department Historical Section, *History of the Panama Canal Department* (n.p., 1949), Vol. 1, *Introduction and Historical Background 1903–1939*, 48; Charles J. Sullivan, *Army Posts & Towns: The Baedeker of the Army* (Burlington: Free Press Printing Company, 1926), 9.

3 Major B.G. Chynoweth, "A Tour of Duty in Panama," *Infantry Journal* 26 (April 1925), 376.

4 Ibid.

5 James H. Sauer, interviewed by author, Owensboro, KY, 5 February 2000.

6 Ibid.

7 James H. Sauer, interview with author, 5 February 2000.

8 "Historical Study On Sabotage: Transit Guard, Lock Guard, Utility Guard" (Quarry Heights, CZ: Panama Canal Department, 1945), USARSO History Office files, National Archives and Records Administration, College Park, MD, 5–8.

9 Sullivan, Charles, *Army Posts & Towns: The Baedeker of the Army* (1926), 10.

10 Chaplain Dudley R. Tierney, "Recreation in Tropical Panama," *Infantry Journal* 26 (April 1925), 402; "Useful Canal Zone Information," *Infantry Journal* 26 (April 1925), 443; George

Chevalier, "Memories of the Early Years of Fort Clayton, Panama Canal Zone," Unpublished manuscript, 1999; Jean Sadler Heald, *Picturesque Panama*, (Chicago: Curt Teich and Company, 1928), 10.

11 AG Historical Branch, *Military Personnel* (Quarry Heights, CZ: United States Army Caribbean, 1948), USARSO History Office files, National Archives and Records Administration, College Park, MD, 165.

12 Sauer, interview.

13 Ibid.

14 *Journal of the United States Artillery*, Volume III, No. 1, 30 January 1920.

15 Heald, *Picturesque Panama*, 11, 71.

16 Ibid., 37–38, 45–46.

17 Michele Labrut, *Getting to Know Panama* (Panama, Republic of Panama: Focus Publications Int., S.A., 1993), 87.

18 McCullough, *Path Between the Seas*, 111–112.

19 The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1936* (Washington, DC: GPO, 1936), 110; Heald, *Picturesque Panama*, 41–42.

20 Letter from Major General H.G. Bishop, Chief of Field Artillery, Washington, DC, to The Adjutant General, Washington, DC, 20 March 1931, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 676, 470.2 Panama Canal Department, National Archives and Records

Administration, College Park, MD; Letter from Major General Preston Brown, Commander, Panama Canal Department to The Adjutant General, Washington, DC, 29 July 1931, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 676, Folder: 470.2 Panama Canal Department, National Archives and Records Administration, College Park, MD.

21 Bishop, letter to The Adjutant General, 20 March 1931.

22 "Construction Report Covering the Construction of Barracks & Quarters for the 2nd Field Artillery at Fort Clayton, C.Z.," Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD.

23 "Completion Report Covering Two Sets of Field Officers' Quarters at Fort Clayton, C.Z.," Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD.

24 PCD Historical Section, *History of the PCD*, Vol. 1, 62–63.

25 *Canal Record*, 29 August 1917, 17; Chynoweth, "A Tour of Duty in Panama," 378; PCD Historical Section, *History of the PCD*, Vol. 1, 62, 65.

26 Office of the Quartermaster Completion Reports accompanying document, dated 30



June 1928, 2, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD; Sauer, interview.

27 Quartermaster Completion Reports accompanying document, 30 June 1928, 1–2.

28 De Mena, *The Era of U.S. Army Installations in Panama*, 127; Allan R. Small, interview by author, Fort Clayton, Republic of Panama, 21 February 1995.

29 U.S. Navy, Bureau of Yards and Docks, *Building the Navy's Bases in World War II: History of the Bureau of Yards and Docks and the Civil Engineer Corps, 1940–1946* (Washington, DC: GPO, 1947), Vol. 1, 323–325.

30 Voss, "The Army Air Service," 417.

31 Ibid., 417–418.

32 Although several sources suggest that there may have been a second runway between the original easternmost row of buildings and the canal, the authors could find no corroborating documentary evidence of this.

33 Letter from W.J. Douglas, Engineer of Maintenance, The Panama Canal to Major Alfred L. Ganahl, Commanding Officer, Military Survey of Panama, Corozal, CZ, 19 March 1919, Record Group 185, Records of The Panama Canal, 1914–1950, Box 383, Folder 3, National Archives and Records Administration, College Park, MD.

34 Sauer, interview.

35 Michael A. Pedrotty, Julie L. Webster, Gordon L. Cohen, and Aaron R. Chmiel, "Historical and Architectural Overview of Military Aircraft Hangars," U.S. Army ERDC/CERL Technical Report TR 98/105 (Langley Air Force Base, VA: Headquarters, U.S. Air Force Air Combat Command, September 1999), 2–7.

36 PCD Historical Section, *History of the PCD*, Vol. 1, 69.

37 Letter from Brigadier General O. Westover, Air Corps, Assistant Chief of the Air Corp to Chief of the Air Corps, Washington, DC, 4 April 1933; Record Group 407, Office of the Adjutant General Central Files 1926–1939; Box 2990, Fort Clark to Fort Clayton; National Archives and Records Administration, College Park, MD; "Completion Report Covering the Construction of Stables (Bldgs 100–111) for the 2nd Field Artillery Battalion at Fort Clayton, C.Z," 26 September 1934, 39, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD.

38 Plans and Property Branch, Directorate of Engineering and Housing, "Building Information Schedule, as of 31 March 1982" (Corozal, Panama: Directorate of Engineering and Housing, United States Army Garrison-Panama, 1982), 6.

39 Pedrotty, Webster, Cohen, and Chmiel, "Military Aircraft Hangars," 2–7.

40 Memorandum from Commanding Officer, Fort Clayton to Commanding General,

Panama Canal Department, 1928, Record Group 407, Office of the Adjutant General Central Files 1926–1939; Box 2990, Fort Clark to Fort Clayton, National Archives and Records Administration, College Park, MD.

41 AG Historical Branch, *Military Personnel*, 162–163.

42 Memorandum from unknown to Chief of Staff, Supply Division, Washington, DC; 1 November 1933, Record Group 407, Office of the Adjutant General Central Files 1926–1939; Box 2990, Fort Clark to Fort Clayton, National Archives and Records Administration, College Park, MD; Letter from George A. Lockhart, Captain, 33d Infantry, Post Exchange Officer, Fort Clayton, Canal Zone to The Panama Canal, 9 July 1934; Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD.

43 The primary architect for the building was Gustav ('Gustavo') Schay, who was born and educated in Budapest. In 1919, following the conclusion of the first World War, Schay traveled and worked through the 'Americas' – first to Argentina, then to Chile, and to Bolivia, where he worked as the La Paz Municipal Engineer. Schay also lived in Colombia, and was working there when an earthquake rocked the country. Immediately following the catastrophe, Schay was placed in charge of rebuilding the city of Cali. Schay moved to Panama City in the Republic of Panama, and in 1927 formed a partnership with James Wright, an architect from the

- United States. Among Wright's designs was the Santo Tomas Hospital in Panama City.
- 44 Richard Holzer, interview by author, Panama City, Panama, 11 November 1999; electronic communication from Richard Holzer to author, 22 November 1999.
- 45 Fred M. Fogle, Major, Quartermaster Corps, Post Quartermaster, "Completion Report covering the construction of Service Club and Utilities at Fort Clayton, Canal Zone," 8 April 1935, 1-2, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917-1943, Box 67, Claremont Terminal to Fort Clayton, CZ, Vol. 1, National Archives and Records Administration, College Park, MD.
- 46 Record of Communication received from H.D. Selton, Lieutenant Colonel, 33d Infantry, Commanding, Headquarters, Fort Clayton, CZ, to The Adjutant General, 23 May 1933; Record Group 407, Office of the Adjutant General Central Files 1926-1939; Box 2990, Fort Clark to Fort Clayton, National Archives and Records Administration, College Park, MD.
- 47 Memorandum from unknown to Chief of Staff, War Department, General Staff, Washington, DC; 4 November 1933; Record Group 407, Office of the Adjutant General Central Files 1926-1939; Box 2990, Fort Clark to Fort Clayton, National Archives and Records Administration, College Park, MD.
- 48 *The Panama American*, 16 November 1933.

CHAPTER 4

Hostilities on Two Horizons (1936–1941)

The Changing Canal Defense Mission

In light of the deteriorating security situation in Europe, a sense of urgency began to influence defense plans and appropriations in the late 1930s. By 1939 Congress had authorized \$50 million in funding for improving canal defenses. Because a vast increase in manpower was a key element in this program, much of the new construction budget was dedicated to expansion of housing at existing bases. The majority of the expansion program construction was completed by early 1942.

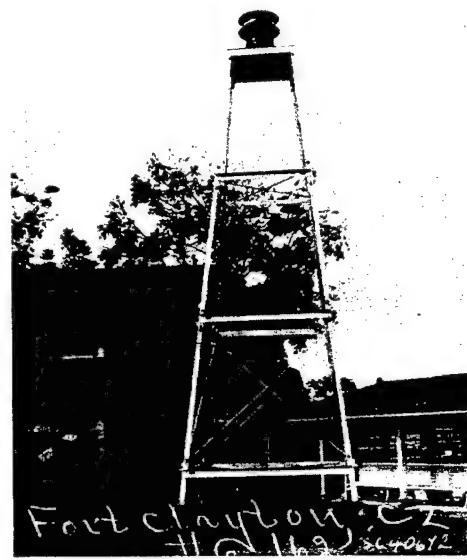
As always, the mission of the Panama Canal Department was to keep the canal open and operating. However, canal defense methods had to be adapted to keep pace with advances in offensive technology. Previously, a ‘close-in’ defensive strategy had prevailed: long-range guns guarded the sea approaches to the canal, field artillery protected those guns, and a small ground force defended the field artillery and was prepared to delay any enemy landing until reinforcements could arrive from the United States. With the advent of long-range bombers and rapid advances in aircraft carrier technology and tactics, the longstanding canal defense strategy needed a major update. During the late 1930s, a new canal defense strategy was developed to prepare for looming threats posed by attacks from the air.

The air attack threat and others were laid out in a 1939 War Department “list of expectancy” that included possible scenarios for attacks that the Panama Canal Department would have to repel before reinforcements could arrive [4.01]. Sabotage through explosives placed in the canal, and air bombardment by sea or land-based planes led the list.¹ The objectives of all these scenarios were basically the same as ever: (1) to render the canal unusable through damage caused by small raiding parties or (2) to capture the canal through a massive military attack and operate it for enemy advantage.²

The plans developed by the War Department and the Panama Canal Department provided a line of defense sufficiently removed from the canal to eliminate the possibility of a naval-borne air force getting to within striking distance. The area encompassed by this plan became known as the Panama Coastal Frontier, and defending it was the responsibility of the Panama Canal Department. Within this area would be (1) an extended defensive line to intercept ships and planes, (2) a “close-in line of resistance” to protect the coastline and prevent landings, and (3) a local system of “defensive weapons and delaying-positions in which the final canal defense actions would be fought.”³ The ground forces of the Panama Canal Department would be crucial to the last two defense elements.

Reorganizing for the Emergency

In response to the imminent certainty of open warfare in Europe, emergency measures for the canal were initiated in the last days of August 1939. In addition to troop



[4.01] Anti-aircraft warning signal tower constructed at Fort Clayton by The Panama Canal, July 1940.

buildup, these measures included anti-sabotage activities and a transfer of canal authority to the U.S. Army.

The Army garrison at Panama was given the mission of "protecting the canal against sabotage and of defending it from positions within the Canal Zone."⁴ The Navy was tasked to provide offshore defense, provide armed guards for ships transiting the canal, and maintain a harbor patrol at both ends of the canal.⁵ As early as 5 September 1939 an Executive Order was issued transferring administrative jurisdiction and authority over the canal and the Canal Zone to the Panama Canal Department.⁶ The massive guns and batteries at both ends of the canal were prepared for use. The 11 Atlantic and 12 Pacific batteries bristled with 6–16 in. guns boasting a firing range of up to 25 miles. To protect against air attack, anti-aircraft batteries were put in place across the Canal Zone, and two anti-aircraft detachments were deployed in September 1939. Two long-range radar stations were built that autumn. The main runway at Albrook Field was improved to handle the larger modern bombers, which began arriving in June 1939.

A new organization for the Panama Canal Department was put in place during February 1940. Department forces were divided into Department Troops, the Panama Mobile Force (Provisional), the Panama Separate Coast Artillery Brigade (Provisional), and the 19th Wing.

In 1941 the United States took the British possessions of Jamaica, Antigua, St. Lucia, Trinidad, and British Guyana into protective custody. Because all of these islands were considered potential military bases, this action created the need for a major command reorganization. To administer the five new U.S. protectorates in the Caribbean, and to address issues of command extent between the various Army and Navy forces in the area, a new theater command was established. The Caribbean Defense Command was officially activated on 10 February 1941 under the command of General Daniel Van Voorhis, then Commander of the Panama Canal Department. The Caribbean Defense Command was initially set up as strictly Army, and coordination with Navy operations was ordered by "mutual cooperation." A separate command, the Caribbean Air Force, was established for air defense at about the same time. On 29 May 1941 General Van Voorhis released General Order Number 8, which outlined the organization for the Caribbean Defense Command:

This Command was divided into the Panama Sector, comprising the Panama Canal Department (responsible for Ecuador, Colombia and Central America south of Mexico), the Puerto Rican Sector comprising the Puerto Rican Department (which was responsible for the Virgin Islands, the Bahamas Base Command, the Jamaica Base Command, and the Antigua Base Command), and the Trinidad Sector consisting of the Trinidad Base Command, the St. Lucia Base Command, and the British Guiana Base Command. In addition, there was the Caribbean Air Force with responsibilities in all three sectors.⁷

On 21 May 1941 President Roosevelt had designated a state of 'unlimited emergency' in the Canal Zone; military dependents were evacuated to the United States by Octo-

ber.⁸ General Frank M. Andrews succeeded General Van Voorhis as Commander of the Caribbean Defense Command in August 1941. By that time troops from Fort Clayton had deployed to protective outposts to man anti-aircraft artillery, automatic weapons, and searchlights, and to provide security patrols at canal facilities. Troop strength in Panama rapidly escalated, from 13,451 in 1939 to 31,400 by December 1941. At Fort Clayton alone there were 147 officers and 3927 enlisted men.⁹

Canal Priority in the 1939 Defense Augmentation Program

Funding the 1939 Buildup

In June 1939 Congress began appropriating vast sums of money for expanding U.S. defenses. The potential vulnerability of the Panama Canal was a high-priority concern because it was considered vital for shipping defense supplies and troops. The 76th Congress provided initial appropriation of \$50 million for strengthening Panama Canal defenses and for implementing the Air Corps Expansion and Coast Artillery Augmentation Programs. Because the bolstering of U.S. defenses required a sharp increase in troop strength, construction of housing and related necessary features was essential. The Panama Canal Department was projected to reach a mobile force of 23,000, an Air Corps force of 5962, and a Coast Artillery force of 9270. The most pressing needs in the department were for housing, training, and hospital facilities, but all other necessary facilities such as supply, ordnance, troop support, administration, utilities, and schools had to be provided as well. In addition to supplementing facilities at existing bases, money was provided to acquire land in Panama for additional defensive sites. Congressional funding for buildup purposes continued through the remainder of the prewar period. Almost 80 percent of the first construction program was dedicated to housing.¹⁰

Funds for the expansion program construction became available on 1 July 1939, and until December 1941 this construction was carried out under the Office of the Constructing Quartermaster, Panama Canal Department, with a staff of about 35.

Problems Getting Started

Despite all the efforts—both past and contemporary—to improve and standardize Army facility design, the 1939 expansion effort was initially hampered by two factors: field engineers and architects with no experience in tropical construction and micromanagement by the War Department in Washington.

A group of engineers and architects from the United States arrived in the early fall of 1939. Their lack of experience in tropical climates proved a great liability. Having never experienced the torrential downpours common on the isthmus, for example, they designed curb outlets with 4–6 in. runoffs when 12–15 in. runoffs were actually necessary.¹¹ Meanwhile, in Washington, progress was inhibited by the requirement that all facility designs be approved by the War Department. Washington's lack of familiarity with the tropics in general, and with Panama in particular, produced many designs that needed significant revision before they could be used in the field.

Some plans reached the isthmus before such details as fireplaces and heating plant installations were deleted. Practically all plans that came from Washington included the use of glass windows to an extent unnecessary in the tropics. At one time, plans designed for Puerto Rico were sent to this Department. Rejection was based on the cost factor. In Puerto Rico, construction is designed to resist winds of hurricane velocity, whereas in Panama violent winds are unknown and severe wind storms are of short duration.¹²

Calls for construction bids were delayed until March 1940 due to disagreements in Washington over what type of construction contracts should be let. The first contractors did not reach the isthmus until July 1940. In the meantime, troop labor was used to clear construction sites and put in footings. The housing shortage was especially acute because new troops began arriving in the Canal Zone about the same time that construction got underway. It was essential to get men and materiel out of tents and into buildings as quickly as possible.

Once begun, the actual construction was reasonably swift. The scope of the job was tremendous, though, and every available soldier was detailed to some aspect of construction. The use of troops enabled the contractors to 'hit the ground running' but it created chaos with troop training schedules. Even so, essential training was not neglected. Every effort was made to familiarize "green" personnel with their weapons and defense missions. This end was partially achieved by staging repeated alerts during the workday. At the sounding of an alert, artillerymen working on the roofs of their partially completed hutments would slide to the ground and race to their weapons. After brief exercises the soldiers would return to their construction work.¹³

Due to the extreme time constraints, much of the new construction was intended to be temporary only. Standard building plans would be used, but substitutions often would be made to best exploit the materials that were on hand. Inexpensive materials were substituted where feasible and construction methods were modified to reduce labor costs. Designs were stripped down to essentials, and all ornamental details were eliminated. Temporary structures were inherently less durable, and were often meant to be easily disassembled and re-erected elsewhere [4.02].

Impact of the "Third Locks Project"

Another huge construction project in progress at this time concerned the capacity of the Panama Canal. As both the size and number of ships transiting the canal increased, Congress authorized the construction of an additional set of locks in 1939. Known as the "Third Locks Project," new, larger locks would be constructed near the existing ones at Gatun, Pedro Miguel, and Miraflores to increase capacity. Excavation at the Pacific approach channel to the new Miraflores lock was begun on 1 July 1940, at approximately the same time the military construction program was gathering steam. A severe labor shortage resulted as both programs competed for construction personnel. The U.S. entry into the war changed priorities, and in mid-1942 the Navy postponed indefinitely the construction of the large battleships that would require the new locks. This effectively ended the Third Locks Project.



[4.02] Temporary tent quarters for officers, 1941.

"Upon arriving at Fort Clayton in November of 1941, I was assigned 'quarters' in Tent No. 19. With orders in hand I moved down the sidewalk past the Bachelor Officers' Quarters, admiring the beautiful, two-story apartment buildings where quarters were shared by from two to four officers, and enviously contemplated my future move into them. Then I came to the end of the sidewalk. Nothing but tents, two officers per each."

**Arthur R. Datnoff, Colonel,
U.S. Army (Retired)¹⁴**

The Construction Program

Design Modernization and Improvement

With enough funds available to modernize building standards, much thought was invested in improving current designs—especially for enhanced performance in the tropics. Several new design features characterized this period of construction at Fort Clayton. One major improvement was ridge ventilation, which provided a distinct improvement over standard gable ventilation systems. Ridge ventilation allowed a constant outflow of hot air along the entire length of the roof.

To further enhance ventilation control, virtually all original exterior screened doors and windows were outfitted with jalousies—adjustable louvered windows with horizontal slats. Jalousies were popular throughout the isthmus despite the fact that they shut out light along with the wind and rain [4.03]. After much experimentation, two types of jalousies were favored: a basic version, which was essentially a slatted blind with a center adjustment rod; and the “Miami” type, which incorporated hardware slides and crank-action handles that allowed adjustment to any desired intermediate angle. While the Miami type was functionally preferable, the Panama Canal Department shops produced large quantities of the simple, low-cost version for use on post.¹⁵

Also during this period, to help win the never-ending battle to protect personal property from the voracious tropical mold and mildew, electric dehumidifiers began finding a place in Canal Zone dry closets.

Another key design change implemented during this period certainly was not unique to the Canal Zone. In fact, the surprising thing is that it was adopted at such

[4.03] Typical style of aluminum jalousies used in Canal Zone Army construction, 28 December 1950.



a late date. The installation of hot water systems (besides kitchen facilities) in all Panama Canal Department housing was a product of this construction effort. Previously, water provided by the utility system had typically been delivered to the user at room temperature, which was not physically uncomfortable for bathing in the tropical climate. However, when hot water systems were widely implemented in Canal Zone baths and laundry facilities there was a marked decrease in fungal skin infections.¹⁶

Expansion Program Residential Construction

A portion of the \$50 million 1939 appropriation for canal defense was earmarked for new construction at Fort Clayton. The number of troops stationed at Fort Clayton rapidly rose from mid-1930s levels, increasing from 63 officers and 2117 enlisted men in December 1934 to 93 officers and 3543 enlisted men in December 1939. In addition to the infantry brigade, members of the Quartermaster Train and detachments of Engineer Corps, Signal Corps, Field Artillery, Medical Corps, and Quartermaster Corps were moved to Fort Clayton. The initial expansion plans for Fort Clayton included new facilities for the Panama Signal Company, 33rd Infantry Machine Gun Company, 1st Chemical Company, Post Detachment, Headquarters and Headquarters Company, and the 33rd Infantry Band.¹⁷

Other new housing planned under the prewar expansion program included new officers' quarters and a block of quarters for NCOs, which were built in the northwest area of the installation. Many of these quarters were constructed of reinforced concrete, stucco, and red Spanish tile like similar structures on post, but others were built in a more temporary manner with similar designs executed in wood.¹⁸

Engineer Quadrangle Barracks and the Origins of Soldier's Field

When plans were being made to relocate the 2nd Field Artillery to Fort Clayton in 1930–1931, the future location of the 11th Engineers was discussed as well. It was considered a good idea to keep the engineers as close as possible to the troops they supported, so the 11th Engineers were also relocated to Fort Clayton. Due to the scarcity of Depression-era funds, however, the construction required to support this move had to be executed in two steps. Emergency Relief funds were appropriated for the War Department for 1935–1937 and used to build two barracks (Buildings 126 and 127) for the 11th Engineers. Novey & Lutrell, of Ancon, Canal Zone, was the general contractor for construction. The Quartermaster construction office drew up the plans. Work began in July 1936 and the barracks were completed by June 1937 at a cost of \$300,000. This cost included the construction of sidewalks, roads, and necessary utilities, including four streetlights. All materials used came from the United States except sand, stone, wall tile, and roofing tile, all of which were available in Panama. A transformer house was built between the two barracks.¹⁹

The barracks were sited in a line perpendicular to the southeast end of the 2nd Field Artillery Barracks (Building 95), on the open fill area northwest of the infantry area. Facing in toward Building 95, these barracks began to define what would become



[4.04] 11th Engineers barracks (Buildings 127 and 126), right, with beer garden (Building 39) at left.

Soldier's Field, the installation's central quadrangle for the remainder of the century. Designed to accommodate one engineer company (130–150 men), the three-story buildings employed the same materials and design techniques as the other barracks on post, with concrete frame construction on raised concrete piers, concrete block walls, large screened openings, overhanging tile roofs, and mediaguas on intermediate floors. On the first floor, concrete block walls extended halfway up the exterior. Each building measured 61 × 141 ft and was identical to its mate. With a few variations, this basic design was adopted for all barracks subsequently built at Fort Clayton [4.04, 4.05].

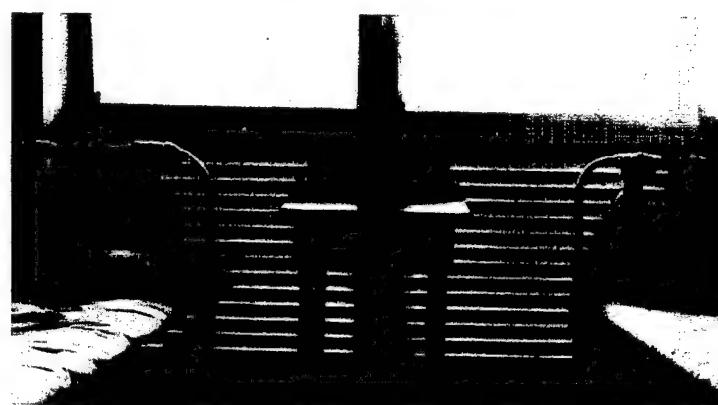
The first floor of each of these buildings comprised a mess hall and kitchen, cook's quarters, store room, offices, a dayroom, barber, tailor, and issue room. Exterior doors and stairs to the ground level were placed at the mess hall and both ends of the dayroom. The second and third floors each housed two squad rooms, with NCO quarters in each corner and bath facilities and dry rooms in the center. The attic contained a storeroom.

Construction of the remainder of the 11th Engineer Regiment's barracks would have to wait until more funding was available.

Completion of Soldier's Field Area Housing and Engineer Headquarters Barracks

A bill to authorize the appropriation of up to \$1.6 million for the construction of barracks, quarters, stables, gun sheds, garages, and a waste incinerator at Fort Clayton was introduced to Congress on 22 January 1936. The Military Appropriation Act of 1939 reduced this amount to \$828,000 on 11 June 1938. Funding for the barracks, amounting to \$650,000, was released immediately. The remainder won approval the following year. The Office of the Department Quartermaster, Panama Canal Department, prepared plans for the construction project. Robert E.

[4.05] Interior of barracks.



McKee, General Contractor, of El Paso, Texas, won the contract and began work 20 January 1939. Included in the contract were requirements for water mains and fire protection, storm sewers, sanitary sewers, roads, curbs and sidewalks, electric distribution and street lighting, grading, and pre-cast concrete drains. The project was completed by 20 March 1940 at a cost of just under \$581,000.²⁰

Standard Barracks. Construction of these barracks completed the quadrangle begun with Buildings 95, 126, and 127 and finalized the enclosure of the new parade ground that would become known as Soldier's Field [4.06]. Over the years Soldier's Field was the location of many formal military observances, culminating with the USARSO departure ceremony on 30 July 1999.

Four of the five new barracks were designed along lines similar to the earlier barracks, and their exteriors were closely matched. Like the previous barracks, these were three-story, concrete frame structures which were being described by this point as "standard type of barracks for the Canal Zone."²¹ In fact, standard barracks designs created in the fall of 1939 were based on these structures. The proven construction design of stuccoed concrete block walls with wide screened openings, mediaguas, and overhanging tile roofs was used again. The inward-facing buildings had the same measurements as the first two (within a few inches), with loading platforms built along the rear.

The four standard barracks each held a company of troops, about 140–150 men. The first floor housed a mess hall, kitchen, storeroom, cook's room, issue room, and dayroom. There were also offices for NCO, Company Officer, 1st Sergeant, and shops for the tailor and barber. Exterior openings off the quadrangle led upstairs to the mess hall and dayroom. An exterior opening was also installed in the office of the Company Officer. Interior stairs in the dayroom led upward to the squad rooms on the second and third floors. Each floor had two squad rooms for 32 men with an NCO room in each corner and dry rooms and toilets in the center.

Engineer Regiment Headquarters Barracks. The fifth building was the headquarters barracks for the 11th Engineer Regiment, Building 129 [4.07, 4.08]. Designed to house 180 men, the building measured 221 × 61 ft including a loading platform in the rear and two wings on the front that wrapped slightly around the sides. The upper floors measured 181 × 61 ft. The exterior was designed to match up well with Building 95, which it faced across the quadrangle. The central entrance was completely encased in a massive surround of concrete that was echoed to a smaller extent on the two wing entrances.

The main block of the first floor held two dayrooms separated by an issue room, toilet, and barber shop. The kitchen, cook's room, and storeroom occupied one end



[4.06] 11th Engineers regimental barracks
(Buildings 128, 130–132), 4 June 1940.



ADMINISTRATION BLDG 11TH ENG. AT FT. CLAYTON, C.

[4.07] Building 129, 11th Engineers administration building.



[4.08] 11th Engineers officers in front of their Headquarters Building (Building 129), 1942. "The captain, second man from left sitting, is Andy Goodpaster, who became a 4-star General. All the 11th vets are proud of him."—Robert H. Tippett, 2000.

and the other contained two large offices. The north wing had rooms for NCO, 1st Sergeant, and Company Officer. The south wing provided office space for the Commanding Officer and the Adjutant. There were exterior doors at each wing and in the center. Interior stairs in the dayrooms led upward to the two 40-man squad rooms on the second floor with corner NCO rooms and central dry rooms and toilet. The third floor repeated the arrangement on the second floor.

In 1962, Building 129 underwent a complete remodeling for its conversion into the Clayton Elementary School. The students on post had been bused to various Canal Zone schools over the years. The establishment of an elementary school within Fort Clayton enabled the students to stay on

post. The interior of the building was converted to meet the requirements of an educational facility. The first floor received classrooms, a clinic, teachers' lounge, principal's office, library, music and audio-visual rooms, and a kindergarten room. A small air conditioning system cooled the music room, audio-visual room, and a special education classroom. Window units supplemented this system on the first floor. The interior stairs were rebuilt to accommodate the shorter stride of children. The second and third floors had classrooms and toilets. The exterior screened openings were replaced with either aluminum frame glass awning or jalousie windows. A concrete canopy was installed behind the building to cover the students from the back door to the street.

A play shelter was constructed in 1966. Located across the street behind the school, it contained a volleyball/basketball court with concrete block and screened exterior walls. An enclosed area housed an office, dry room, and toilets. The entire school building was centrally air conditioned in 1967 with the addition of a chiller plant next to the building. A 1988 renovation upgraded the plumbing, wiring, and air conditioning systems. As part of this project, the first floor windows were replaced with smaller fixed sash windows with security bars.

The "New Post" Barracks

As stated previously, the 11th Engineer barracks was adopted as the model for subsequent barracks construction. As part of the expansion construction program, 20 additional barracks were erected at Fort Clayton by the end of 1941. The same type structures were built at other installations in the Canal Zone too, including Albrook and Howard Fields. These barracks were planned as standard designs in three sizes: 100-man, 150-man, and 200-man barracks. The Office of the Constructing Quartermaster, PCD, created plans for the barracks. Construction was contracted to the firm of McClure, Thompson, and Markham. The buildings were placed in two groups, one set of three (Buildings 154, 155, and 156) behind the southeastern-most of the 1920 infantry battalion barracks (Building 22) and the remaining 17 on the northwest edge of the filled area, beyond the 2nd Field Artillery stables. The three-barracks group was constructed for the machine gun companies, 33rd Infantry, at a cost of almost \$290,000. Building them required the demolition of Building 40 (the guardhouse) and an existing tennis court. The plans for these barracks were only slightly changed from the standard 150-man barracks derived from the 11th Engineer barracks design and were the same dimensions, measuring 141 × 61 ft. Buildings 154–156 were designed with taller concrete pillars on the ground floor. This modification made it practical to enclose the ground floors, thereby providing additional space. On the first floor, the tailor shop was left out and gun locker room, equipment room, and workshop were added instead.²²

Due to both its size and its distance from the existing barracks, the 17-barracks group became a self-contained entity on the installation constructed for the Coast Artillery. Maps from the period even refer to this cluster of buildings as the "New Post." The buildings were arranged in a sort of rounded rectangular manner, all facing inward toward a parade ground that doubled as a recreation/training area. The ensemble even had its own headquarters building (Building 200). Construction of the barracks was contracted to McClure, Thompson, and Markham. They were completed in December 1941, at a cost of \$1.4 million [4.09].²³

The New Post development hosted all three sizes of barracks. There were three 200-man (Buildings 201, 218, and 220), three 150-man (Buildings 202, 203, and 205), and eleven 100-man (Buildings 204, 207, 208, 210-15, 217, 219) [4.10, 4.11]. Apart from size, the 100- and 200-man barracks were practically the same as the 150-man barracks (the first to be designed). Building materials and construction design remained the same. The 100-man barracks design was shorter but no less wide, measuring 121 x 61 ft. The first floor contained a kitchen, cook's room, cold storage, kitchen store room, mess hall, issue room, dayroom, store room, NCO room, barber, toilet, officer's room, and 1st Sergeant's room. Exterior entrances led into the mess hall and dayroom. The second and third floors contained squad rooms. One squad room for 32 men took up nearly half the floor space; the remainder was utilized for the central toilet facilities and a 16-man squad room. An NCO room occupied each corner.

The 200-man barracks was significantly longer (201 x 61 ft) but had the same width as the others. The increased length allowed for larger individual rooms on the first floor and included two extra dry rooms. Otherwise, room function was the same. The second and third floors each contained two 48-man squad rooms with NCO rooms in each corner, and central toilet and dry room facilities.

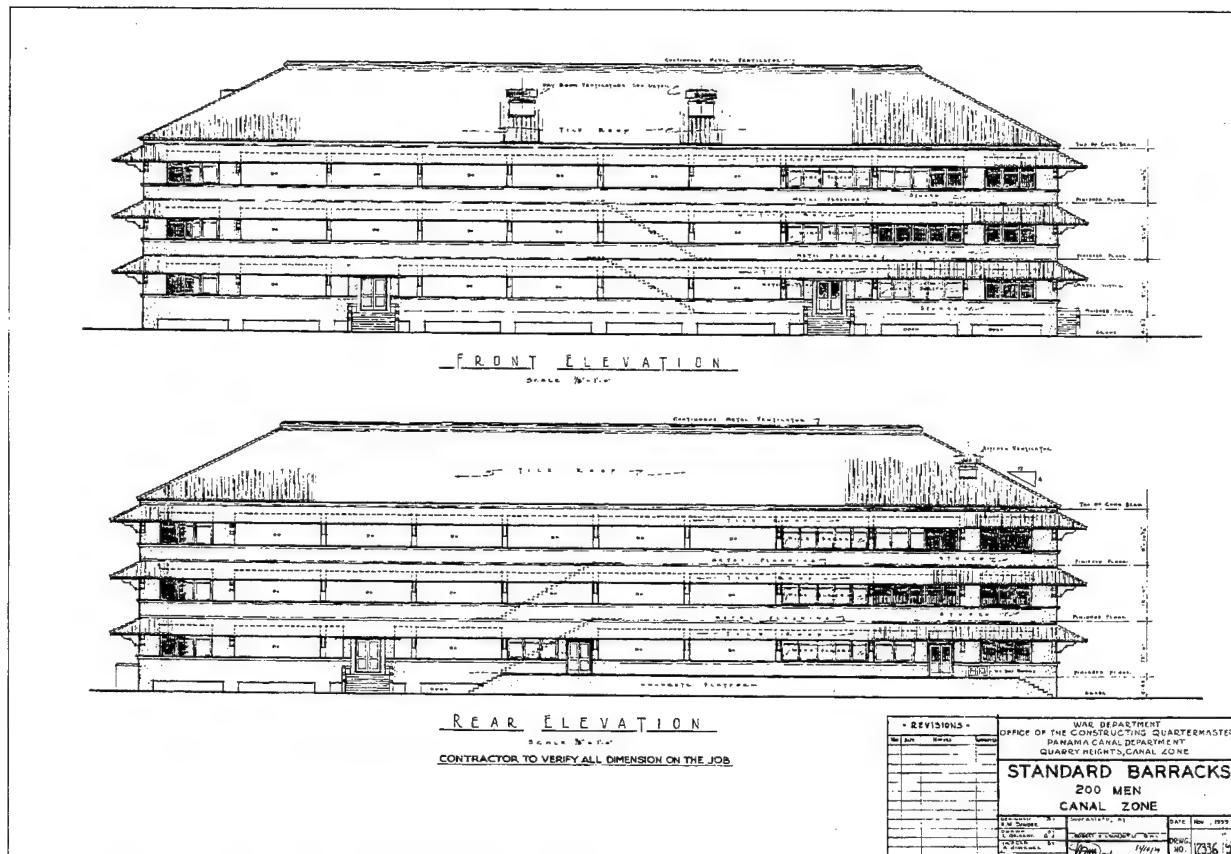
Noncommissioned Officers' Club

The NCO Club (Building 153) was actually based on a standard plan for a band barracks. Built in 1941 at a cost of \$55,000, the design followed the standard plan for "Band Barracks, 48 Man," which was designed by the Office of the Constructing Quartermaster, Panama Canal Department. The rectangular two-story building shared the common characteristics of barracks construction at Fort Clayton, except on a smaller scale: concrete block walls covered with stucco, wide screened openings, a raised first floor, mediaguas, and Spanish tile. The building measured 121 x 41 ft and had a rear loading dock.

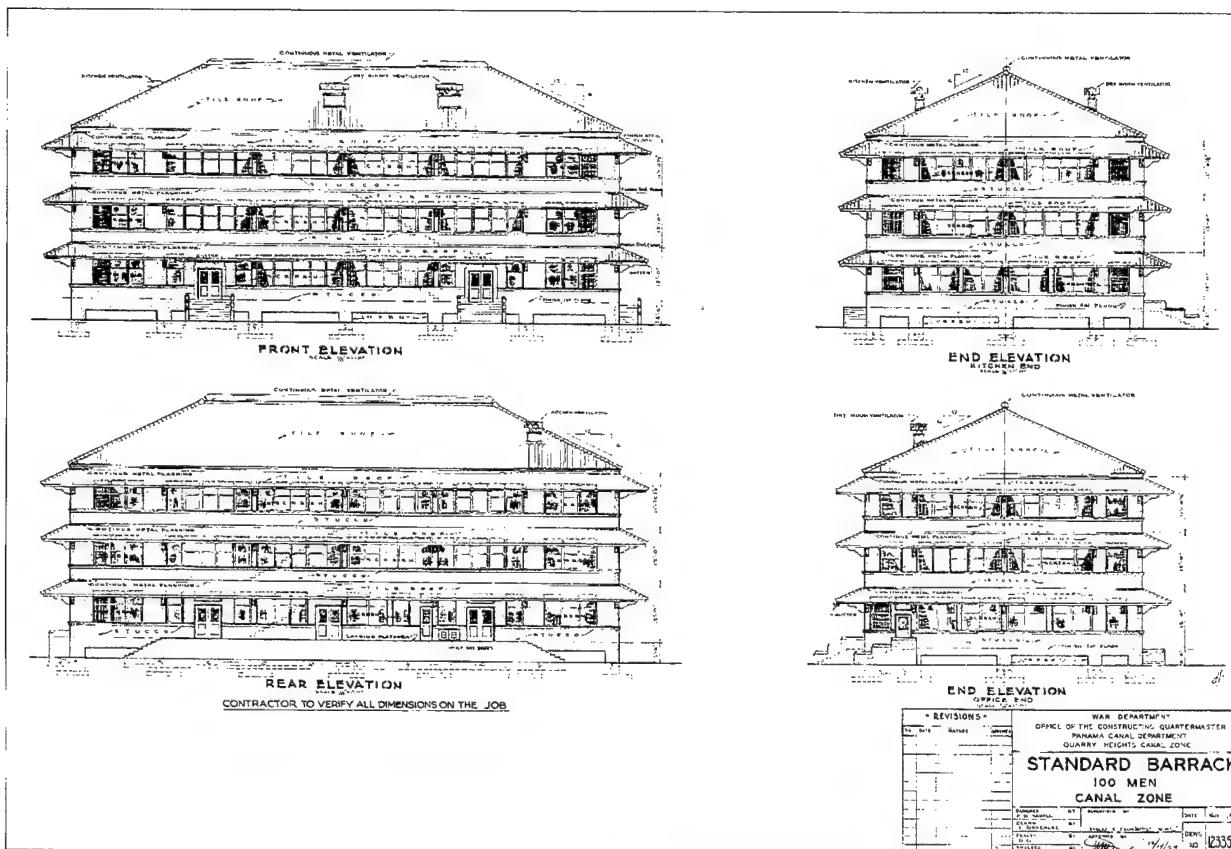
Entry to the first floor was through a door into the dayroom and one into the band practice room. The floor also contained a library and composing room, orderly



[4.09] Aerial view of U.S. Army Coast Artillery Area, later known as U.S. Army Garrison Area (200 Barracks Area).



[4.10] Front and Rear Elevations, Standard Barracks, 200 Men.



[4.11] Front, Rear, and End Elevations, Standard Barracks, 100 Men.

room, office, storeroom, repair room, issue room, six dry closets, orchestra and practice room, toilet, and NCO room. One set of interior stairs led upward from the center front. The second floor served as the 48-man squad room with two NCO rooms in the north corners and a dry room, laundry, and toilet at the other end.

In 1961 the NCO club was modernized. The ground floor was enclosed by this time and there were walkways and ramps in place. The ground floor contained storage and offices, as well as the main bar, a game room, and toilet. The restaurant, kitchen, and foyer were located on the first floor. The second floor held the ballroom with a bandstand, bar, and toilet facilities. At this time, the windows were replaced with aluminum frame awning windows as well as some aluminum frame glass jalousies. This renovation required the infill of much exterior wall area. Picture windows were installed in the restaurant and bar. An air conditioning system provided cool air to the ballroom, bar, and restaurant. A 70×41 ft one-story addition was constructed in 1968 with an open ground floor and flat roof. The ballroom was relocated to this area, which became an extension of the restaurant. The air conditioning system was upgraded at this time with the provision of a separate chiller building. A 1978 addition to the rear of the main block, measuring 39×34 ft, was constructed of low concrete block walls, screened steel bar grilles above the block, and a low pitch shed roof. By 1984 this addition had become annexed to the bar area, and horizontal sliding windows had replaced the grilles. The ballroom addition received a low-pitch Spanish tile roof in 1993.

Temporary Officers' Quarters

With the vast amount of construction underway in the Canal Zone at this time, most available housing was occupied. Having staffed-up to accomplish the expansion project, the Quartermaster Corps found itself short of housing for its own workers. This shortage was alleviated at Fort Clayton by building five sets of temporary officers' quarters [4.12]. An Assistant Constructing Quartermaster's Office had opened at Fort Clayton about this time. Funds for the project came from the expansion program, and the Constructing Quartermaster's Office, PCD, developed the plans and hired local labor to execute construction. The project was authorized on 14 September 1939 and construction began on 9 October 1939. Materials were procured from The Panama Canal, from the local market, and imported from the United States. The five houses were completed on 31 January 1940 at a cost of \$4100 each.²⁴

Located at the north end of the Officers' Row with the 2nd Field Artillery officers' quarters, these temporary quarters were similarly sited facing onto the open area toward the infantry barracks. The quarters shared many of the same design elements used in other tropical quarters built in the Canal Zone. The primary difference



[4.12] Temporary officers' quarters, Buildings 88–92.

between these temporary quarters and their permanent neighbors was the use of wood as the primary building material. The frame buildings measured 18 × 52 ft, with a 24 × 27 ft wing. Corrugated iron[†] covered the roof with its wide, overhanging eaves. The concrete area under the raised first floor contained a servant's room with bath, a storeroom, and a closet. Stairways led up to the front porch and kitchen. There was a large combined porch/living room at the front of the house, which included large screened openings installed with louvered blinds. The dining room was located in one half of the area behind the porch. The rooms were open to each other and the large screens extended around this side of the building. The other half of the area behind the porch was an enclosed kitchen. The bedroom wing was placed on the other axis and contained three bedrooms, a hallway, and two baths. The bedrooms, kitchen, and baths had wood casement windows.

Far from being temporary, these five houses remained occupied until closure of Fort Clayton in 1999. For Buildings 88–92, few exterior modifications were made other than for ventilation purposes. The front of the porch had wood louvers installed below the screened openings by 1954. The installation of central air conditioning in 1987–1988 made it necessary to replace the screened openings and casement windows with double-hung windows. As part of this modification, the wood louvers were removed and the openings filled in with siding. All quarters were completely rewired to accommodate the air conditioning upgrade. In 1996 Buildings 91 and 92 were converted for use as

[†] It is worth noting here again that although the property records specifically identify the roofing material as "corrugated iron," it is more likely that the material was actually steel, which is distinct from iron in terms of metallurgy. The wording of the original record has been preserved in the current text, however.

distinguished visitor quarters. For each building, the ground floor servant's room was expanded and remodeled into a guest room. On the main floor, the central bedroom of each building was converted to a living area. The utilities were upgraded. The grounds were much improved with the addition of a metal canopy that connected the two buildings, widened sidewalks, curvilinear decorative concrete block screening walls, and extensive plantings.

Expansion Program Administrative Construction–Mobile Force Headquarters Building

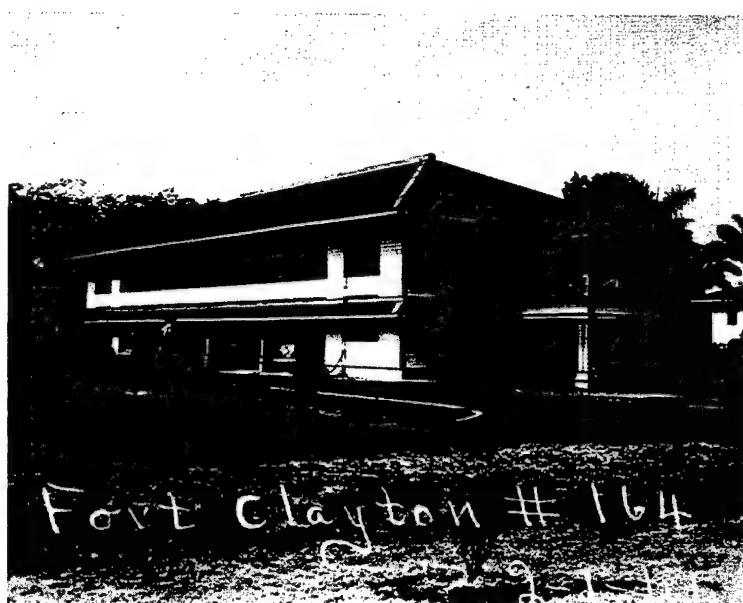
As the Panama Canal Department prepared to enter the war the need for a new mobile force headquarters building became apparent. The Panama Canal Mobile Force had been using as its main facility a wood structure located on Roosevelt Avenue in front of the Panama Railroad line in Balboa. Plans were made for the construction of a larger headquarters building, more securely and conveniently located at Fort Clayton [4.13].²⁵

The new Mobile Force Headquarters (Building 164), located on the site of the current chapel (Building 64), faced Gaillard Highway. Completed and ready for occupancy on 28 February 1941, the administrative building measured approximately 42 × 90 ft with a porte-cochere on the south end. The concrete foundation supported walls of wood siding. The roof was of galvanized iron.

The ground floor plan included a stationery supply room, mimeograph supply room, mimeograph room, storage room, caretaker's room with dry closet, NCO's room with dry closet, message center with supply closet, drafting room with alcove, officers' toilet with dry room and shower, and enlisted men's toilet with shower. There was also space for parking seven cars. The second floor contained a deck over the porte-cochere, an office for the Mobile Force Commanding General, a conference room, and clerical space. The construction of the building was executed by enlisted soldier labor under the supervision of the 11th Engineers.

Expansion Program Operations and Support Facilities

Other than barracks and housing, a large part of the construction at Fort Clayton during this prewar era was related to the support of troops and military mission made necessary by the expansion of the installation. With the rapid influx of troops, support facilities were overtaxed and new ones were required. The development of these facilities highlights contemporary military trends in general, and Army trends in particular. The threat of becoming involved in World War II dictated the need for heightened training, security, and defenses. These needs, in



[4.13] Panama Mobile Force Headquarters Building.

turn, drove the requirements for facilities such as aircraft warning towers, a radio transmitting station, a fire house, a headquarters building, and a firing range. Perhaps surprisingly, the inevitable shift from animal transportation to motor vehicles proceeded more quickly among the public at large than within Canal Zone military units, primarily due to terrain difficulties. The shift was occurring, however, as indicated by the construction of new motor pool facilities and garages at Fort Clayton.

Chiva Chiva Firing Range

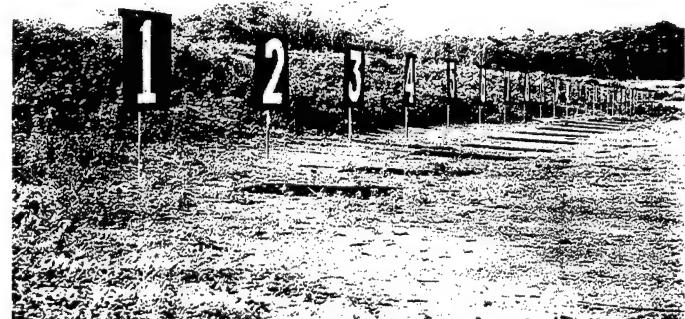
Training remained an essential element of the mission of the troops at Fort Clayton and other installations in the Canal Zone. In order to support the training of troops in small arms fire, the original target range northwest of Quarters 9 was closed and relocated to a more suitable parcel of land. The new site, recommended by the Housing Board in June 1939, was contiguous with a small area of Fort Clayton's northern boundary.²⁶

The new site, located in an area known as Chiva Chiva, contained almost 100 acres and was located about one mile north of the installation. The Chiva Chiva Firing Range was "provided to serve all units stationed at Fort Clayton, to facilitate the completion of small arms firing."²⁷ Construction of the range was assigned to the 11th Engineers with additional troop labor supplied by enlisted men assigned to Fort Clayton. Target equipment was supplied by the PCD Ordnance Officer; the PCD Signal Officer was tasked with installing communication facilities; and the Constructing Quartermaster provided all building materials and heavy equipment required for earthmoving. Construction began on 12 February 1940 and was completed on 11 May 1940 at a total cost of about \$27,500.²⁸

The Chiva Chiva Firing Range consisted of three shed-type firing point shelters, each measuring 20 × 99 ft, with corrugated iron roofs but no walls or floors [4.14, 4.15]. Parallel to the shelters were three target houses, designated Buildings 169–171, built entirely of reinforced concrete.



[4.14] Range Houses on Target Range at Chiva Chiva.



[4.15] Targets on the 500-yard range.

Aircraft Warning Signal

In July 1940, The Panama Canal constructed an aircraft warning signal tower on Fort Clayton. Identified as Facility 162, the tower was constructed of steel on a concrete base measuring 12 × 12 ft. It was located at the corner of Gail-lard Highway and Craig Avenue, directly across the street from Quarters 800.



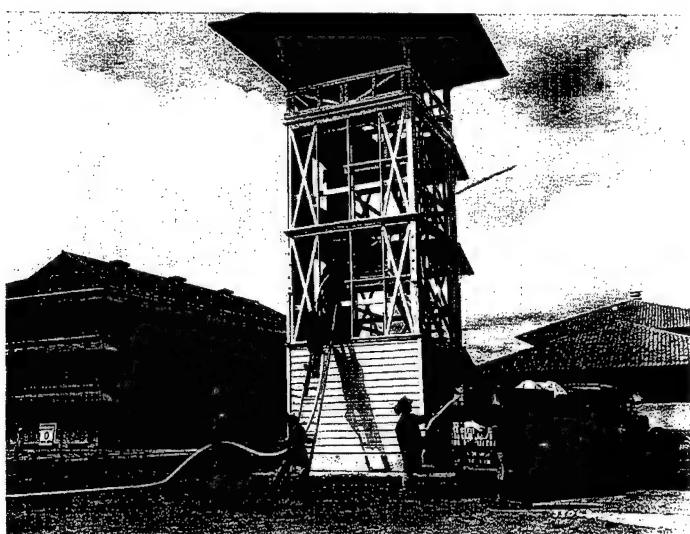
[4.16] Front view of the Fire Station and Guard House, 1941.

Fire Station and Guard House (Building 172)

On 21 June 1941, the Novey and Lutrell Construction Company of Ancon, Canal Zone, completed construction of Building 172, the fire station and guard house with communication center [4.16]. Located on Morse Avenue (called Toohey Avenue at that time) across the street from Building 130 (barracks), this building was designed to replace Buildings 40 and 41. Located in the original 33rd Infantry stable area, the original wooden guard house and fire station were considered fire hazards.²⁹

The new two-story building measured 170 × 36 ft, with a rear "L" detention wing measuring 127 × 31 ft. It was designed to reflect the appearance of barracks buildings on the adjacent quadrangle, and was finished with concrete walls and a clay tile roof. A fire siren was mounted on the roof. (Identical structures were also built at Forts Gulick and Kobbe.)

The building was divided into three sections: the fire station, the communication center, and the detention center. The first floor of the fire station section, which accommodated 12 firemen, included an apparatus room with hose rack, work-space, alarm room, firemen's dayroom, office for the fire chief, dry closet, and general room [4.17, 4.18]. On the second floor were located a dormitory for ten men



[4.17] Fort Clayton firemen practice a tower and hose drill for Fire Prevention Week, September 1948.



[4.18] Presentation of individual awards for Fire Drill Competition, October 1954.

and sleeping quarters for two NCOs. The communication center included a Signal Corps office, storage room, and terminal room on the first floor, and on the second, an equipment room, operating room, and toilets. The first floor of the detention section contained a dormitory for 12 guards, and there was another dormitory for 10 guards on the second floor. Prisoners were kept in the rear wing that included a cell block with 26 bunks, a separate room with six beds, two rooms with four beds each, and a one-bed solitary confinement room. The facility could house a total of 41 prisoners.

Building 172 changed little over the years, with most of the modifications executed on the interior of the facility. In 1966 security screens in the parolee area were replaced with concrete block, and in 1973 interior wood walls were replaced with concrete. Security improvements were made to the confinement section in 1975 and 1994. In 1980 and 1988 the Military Police area was renovated.

Radio Transmitting Station (Building 209)

In December 1941 a permanent radio transmitting station (Building 209) was constructed at Fort Clayton on the northwest end of the New Post. Before this time a senior-grade housing unit at Albrook Air Force Base was being used for radio transmission. Built at a cost of about \$64,500, Building 209 was laid on a concrete foundation with concrete and tile floors, concrete walls, and clay tile roof. The main building was three stories high and measured 121 x 41 ft.

During its early years and throughout World War II, the Armed Forces Radio Station fell under the direction of the PCD Special Services Branch. Personnel assigned to the Panama Canal Zone were thrilled to hear baseball games, music, and news from home. There were other radio stations in Panama City at this time, but programming was broadcast in Spanish and Central American popular music was the main feature of local broadcasts.

At the conclusion of the war, Panamanian radio stations wanted the Army to discontinue broadcasting. It had been understood that local stations would regain their monopoly following the war. The command did not concur, however, feeling that programming targeted to U.S. citizens made a positive contribution to military morale. Consequently, broadcasting from this facility continued until the transfer of Fort Clayton in 1999 [4.19, 4.20].³⁰

Routine modifications and rehabilitations were made to Building 209 throughout the years. The network name also changed, from Caribbean

[4.19] A soldier "working on her own show at Armed Forces Radio." The show, called "Doctors Orders," had a large audience in May 1953.





[4.20] A Southern Command Network (SCN) radio broadcast.



[4.21] SCN Dish.

Forces to Southern Command Network [4.21]. The former name was adopted in the 1950s when telecasting was introduced. The latter name came about with the creation of the U.S. Army Southern Command.

11th Engineer Motor Pool Facility

The old 2nd Field Artillery was almost entirely motorized by 1941 when Building 135, the engineer motor pool, was constructed just east of the stables. The 11th Engineers had been located at Corozal but they outgrew their facilities, and it was

decided that they would be realigned to Fort Clayton. When the Engineers moved into their new barracks at Fort Clayton, permission was granted on 1 April 1940 to construct a new motor pool for the group. The Panama Augmentation Program, Military Appropriation Act, and Aviation Expansion Program covered funding for the project, which totaled about \$28,800.³¹

The motor pool, built to accommodate 43 vehicles, was located in the New Post area.³² The main building measured approximately 358 x 296 ft and formed a hollow square. The foundation was concrete, with concrete and crushed rock floors, walls of wood siding, and a corrugated iron roof. Construction began on 11 April 1940 and was completed on 11 January 1941.

Field Artillery Garage

The 2nd Field Artillery was becoming increasingly mechanized. In 1940 troop labor was used to construct Building 134. Located immediately east of Building 111, the Field Artillery Garage measured 168 x 40 ft. It was built on a concrete pier foundation with a floor of dirt and crushed rock. The walls were simple wood frame construction supporting a galvanized iron roof. The floor plan included 16 motor vehicle stalls, a mechanic's pit, two mechanical repair shops, dispatcher's office, issue room, paint shop, salvage room, field artillery supply office, and sub-guard office.

Expansion Program Community Buildings

The rapid buildup of forces required not only new housing and military support facilities, but also new facilities to support everyday life. There were quite suddenly many more people at Fort Clayton and each one created an additional requirement for communication, food, fuel, and recreational facilities. Because security concerns were increasing due to growing military aggression in Europe and the Far East there was a new push to make military installations in the Canal Zone as self-sufficient as possible. As a result, facilities previously available off post were often duplicated on base or moved onto an installation.

Post Office

[4.22] Post Office (Building 151).

Constructed mostly of salvage material, a new post office facility (Building 151) was built in October 1939 [4.22]. It was a small building, measuring 30 x 44 ft and elevated on wood posts mounted in concrete. The floors and walls were wood, and the roof was corrugated iron. The post office was located in the recreation area of Fort Clayton, northeast of the gymnasium and bowling alley.

Post Exchange Garage

A PX garage (Building 152) was constructed in 1941 on Craig Avenue, just south of the engineer motor pool. Unlike Building 135, which serviced government



vehicles, the PX garage serviced privately owned vehicles. Constructed with PX funds, the single-story U-shaped service station building measured 120 ft in length, with two front projecting wings each 60 ft long. A second, smaller two-story building, measuring 30 × 24 ft, housed the automobile accessories and supplies store on the first floor, with a one-bedroom single-family living quarters on the second floor. A 5000-gallon underground gasoline storage tank serviced four gasoline pumps. By 1953 the garage was under the jurisdiction of the 45th Reconnaissance Battalion, and at the time of transfer it was operated by the 534th Motor Pool [4.23].

Commissary

The commissary (Building 175), or Quartermaster Storehouse, Office and Sales, as it was called, was constructed to replace Building 37, the old quartermaster office and warehouse which by 1941 had inadequate storage room and had come to be considered a fire hazard. Notice to proceed with the project was sent to the contractor, Novey and Luttrell Company, on 12 June 1940. Located in the quartermaster area between Winthrop and Pullen Streets, and facing Coiner Street, the commissary was completed on 30 October 1941.³³

Until the construction of this commissary and others exactly like it at Fort Gulick (Building 304) and Fort Kobbe/Howard Air Force Base (Building 1), Canal Zone military personnel and their families did their grocery shopping at commissaries owned and managed by The Panama Canal. In the early years the Commissary Department of the Isthmian Canal Commission built and operated its own ice cream plant, bakery, coffee-roasting facility and banana plantation, and also ran hog, chicken, and dairy farms in Corozal.³⁴ It had been determined that the Panama Canal Zone would be entirely self-sufficient, not having to rely on its host nation for either food or clothing supplies. However, the Army did not particularly like depending on The Panama Canal, and as a result it began constructing its own gas stations, commissaries, and hospitals on the various posts throughout the isthmus.

[4.23] Vehicle maintenance shop (Building 152).



The commissary and storage building was rectangular in shape, 184 × 62 ft on the first floor with a partial second floor measuring 62 × 62 ft over the front part of the building. Constructed completely of concrete, the building was roofed with asbestos-protected metal. While clay tile was the preferred roofing material because of its durability, it was also the most expensive roofing material of the available alternatives. For warehouses and temporary buildings, then, asbestos-coated corrugated steel was used for roofing to reduce first costs and minimize subsequent maintenance costs.

The first floor of Building 175 contained a lobby entered through a set of double doors. A women's restroom, a small office, a basket space, two "basket slides," and one cashier occupied the front section. The middle and rear sections accommodated the groceries section, meats section, and various refrigerated cases and displays. A passage led to the receiving and ordering station; the rear of the building comprised a large storage area with loading platforms on either side of the building. The second floor housed men's and women's restrooms, a small closet, and a large office.

Supplies were transported to this and other buildings at Fort Clayton by rail along the newly completed Panama Railroad spur [4.24]. The railroad line was part of the general construction plan being executed throughout Canal Zone military bases; this new rail spur split from the main line in front of the 2nd Field Artillery stables, curved in a northeastern direction, and ran to the engineer storage area parallel to Buildings 177 and 175. This section of track opened on 14 December 1940.³⁵

In 1955 Building 175 was modified to serve as a training center. The front section of the first floor was partitioned to accommodate seven offices, and the second floor was remodeled to house a classroom, recreation room, office, and training aids room. In 1964, after further modifications and air conditioning of the building, the first floor contained three offices, a conference room, and an air conditioning equipment room; the second floor contained an

[4.24] Fort Clayton railroad spur track under construction.



exhibition area, a large conference room, storage room, and two offices. The building continued to serve as a training aids center until 1999.

Bus Stop Shelters

The PCD PX funded several community service projects completed in 1939, including the construction of several bus stop shelters such as Facility 148 (located between Buildings 129 and 130) and Facility 150 (across Gaillard Highway from Quarters 814 and 815). Because the young military dependents on post were bused to various Canal Zone schools, bus stop shelters were a necessity, especially during rainy season deluges. Troops were also transported on buses, which ran from Fort Clayton through Balboa into Panama City [4.25]. Facility 149, located at the intersection of Craig and Hawkins Avenues, was still in use up to the time of the transfer in 1999.

Athletic Courts

Athletic facilities constructed during this era were limited to tennis and volleyball courts. Facility 165, a single tennis court, was completed in December 1937. Located on Gaillard Highway near the Field Artillery Barracks, the court was constructed by the 11th Engineers with soldier labor. Three single tennis courts (Facilities 158, 159, and 160) were constructed using soldier labor behind Quarters 2 with Athletic and Recreation funds in February 1940. A double court, Facility 174, was constructed in June 1941. Located between the engineer barracks at Soldier's Field and the field artillery stables, the courts measured 120 × 100 ft. Facility 161, a nine-court volleyball court, was completed in July 1940. Constructed under the direction of the 11th Engineers with soldier labor, the courts measured 270 × 60 ft.

Theater #2

Because of the increase in the number of personnel assigned to Fort Clayton, the command found it necessary to construct a second theater. Located in the recreation area on Caples Street, Theater #2 (Building 71) was an exact replica of Building 49 [4.26, 4.27]. Construction was completed on 30 June 1940. A survey from this era indicated that the soldiers' favorite pastime on post was to view movies at the base theater. (Their second favorite on-post activity was visiting the service club or beer hall.)³⁶

Theater #2 was demolished on 30 September 1969 to make way for Valent Recreation Center (Building 53).

Gustav Schay, the originator of the Bellavistino Style, was the architect responsible for the



[4.25] View from Headquarters Building showing bus shelters, 1938.



[4.26] Members of the 11th Engineers and their Army Day Display at Fort Clayton. Note (left to right in background) beer garden, Theater #2 under construction, gymnasium, and Theater #1.



[4.27] Building 71, Theater #2.

design of both theaters at Fort Clayton. It should be noted that he did not fare well during World War II.³⁷

Ready or Not . . .

The U.S. perspective on the conflicts in Europe and the Far East changed drastically on the morning of 7 December 1941. Although Herculean efforts to upgrade the defenses of the Panama Canal were in progress, it would be two more years before they were entirely completed. Strategic plans for dealing with future attacks had been formulated and the Panama Canal Department had made great strides toward implementing these plans. In spite of contractual problems, supply problems, shipping delays, and a severe shortage of labor, the 1939 construction program was only slightly behind its projected completion date of 1 November 1941. Nearly all contracts had been let, and most projects were underway. Meanwhile, troops were pouring into the Canal Zone in preparation for whatever might come. Fort Clayton was poised to be a vital element in wartime activities.

Notes for Chapter 4

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2 Ibid.

3 Ibid., 127–128.

4 Stetson Conn, Rose C. Engelmann, and Byron Fairchild, *The Western Hemisphere: Guarding*

the United States and Its Outposts, Vol. 12 of *United States Army in World War II*, ed. Stetson Conn (Washington, DC: GPO, 1964), 302.

5 Ibid., 302–303.

6 Susan Harp, "Panama Canal Defense Vital During Second World War," *Panama Canal Spillway*, 2 July 1993.

7 Ibid., 327–335; Historical Section, Caribbean Defense Command, *The Caribbean Defense*

Command in the Defense of the Americas, Vol. 1 (Quarry Heights, CZ: Caribbean Defense Command, circa 1949), USARSO History Office files, National Archives and Records Administration, College Park, MD, 265.

8 Harp, "Panama Canal Defense Vital," 2 July 1993; Conn, Engelmann, and Fairchild, *Guarding the United States and Its Outposts*, 304, 310–316.

- 9 AG Historical Branch, *Military Personnel*, 44–45.
- 10 Ibid., 39–40.
- 11 Historical Section, *The Caribbean Defense Command*, Vol. 1, 107–108.
- 12 AG Historical Branch, *Military Personnel*, 139–140.
- 13 Ibid., 76.
- 14 Arthur R. Datnoff; letter to Julie L. Webster dated 19 December 1999.
- 15 PCD Historical Section, *History of the PCD*, Vol. 3, *The War Period 1941–1945*, 210–212.
- 16 AG Historical Branch, *Military Personnel*, 136–137.
- 17 PCD Historical Section, *History of the PCD*, Vol. 1, 49; Vol. 2, 34; “The Army and Navy,” 95.
- 18 PCD Historical Section, *History of the PCD*, Vol. 1, 49; Vol. 2, 34.
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- 20 “Completion Report of Five Barracks Buildings and Appurtenant Utilities at Fort Clayton, Canal Zone, 20 May 1940,” 1, 4, 23, 26, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 21 Ibid., 1.
- 22 Panama Canal Department, “Construction,” Vol. II (Quarry Heights, CZ: Panama Canal Department, 1945), USARSO History Office files, National Archives and Records Administration, College Park, MD, 483.
- 23 Ibid.
- 24 “Completion Report for the Construction and Completion of Temporary Officers Quarters at Fort Clayton, Canal Zone, 17 June 1940,” 1–8, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 25 “Completion Report No. 6 Covering Construction and Completion of Mobile Force Headquarters Building at Fort Clayton, Canal Zone” (Quarry Heights, CZ: Office of the Constructing Quartermaster, Panama Canal Department, 15 June 1941), 74, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 26 “Completion Report on the Construction and Completion of a Target Range at Chiva Chiva, Corundu Military Reservation, Canal Zone” (Quarry Heights, CZ: Office of the Constructing Quartermaster, Panama Canal Department, 16 October 1940), 55–56, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (3), National Archives and Records Administration, College Park, MD.
- 27 Ibid., 54.
- 28 Ibid., 55–56, 58.
- 29 “Completion Report on the Construction and Completion of Fire and Guard House, Quartermaster Storehouse and Office, and Artillery Engineer’s Warehouse at Fort Clayton, Canal Zone” (Quarry Heights, CZ: Office of the Chief of Engineers, Caribbean Defense Command, 14 July 1942), 7, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 30 AG Historical Branch, *Military Personnel*, 183–185.
- 31 “Completion Report No. 7 on the Construction and Completion of 11th Engineers Motor Pool at Fort Clayton, Canal Zone” (Quarry Heights, CZ: Office of the Constructing Quartermaster, Panama Canal Department, 13 August 1941), 1, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 32 Ibid.
- 33 “Completion Report on the Fire and Guard House,” 8–9, 11.
- 34 Ulrich Keller, *The Building of the Panama Canal in Historic Photographs* (New York: Dover Publications, Inc., 1983), 64; *The Panama Canal, Annual Report for 1917*, 161.
- 35 “Completion Report No. 5 on the Construction and Completion of Railroad Spur Track at Fort Clayton, Canal Zone” (Quarry Heights, CZ: Corps of the Constructing Quartermaster, Panama Canal Department, 12 July 1941), 82, Record Group 77, Office of the Chief of Engineers, Construction Completion Reports 1917–1943, Box 68, Fort Clayton (2), National Archives and Records Administration, College Park, MD.
- 36 AG Historical Branch, *Military Personnel*, 193.
- 37 Richard Holzer, interview by author, Panama City, Panama, 11 November 1999; electronic communication from Richard Holzer to author, 22 November 1999. Schay, a citizen of the Republic of Panama, was married to a German woman. Once the United States and the Republic of Panama declared war on Germany, Schay was deported to La Cabana, a Panamanian camp for “enemy aliens.”

CHAPTER 5

Transit Through the Second World War (1941–1945)

Fort Clayton's Role in World War II

Infantry Involvement in the War

In the Canal Zone as in the United States, the events of 7 December 1941 brought immediate and lasting changes. The Air Corps took flight in search of the enemy as ground troops reported in at their posts. Radio and cable censorship began, and military police manned border points between the Canal Zone and the Republic of Panama. In Colon and Panama City, detainment of Japanese persons began. By 11 p.m. on 7 December nearly half of the estimated 300 Japanese in Panama were being held. A temporary internment camp in Balboa was rushed into existence. At 6:45 p.m., all power in the Canal Zone was cut off. Nightly blackouts would last until 15 April 1943.¹

After the attack on Pearl Harbor the number of troops in Panama was sharply increased. The 33rd Infantry was transferred from Fort Clayton to Trinidad, leaving a number of units stationed or headquartered at Fort Clayton. These included the 296th Infantry Regiment and elements of the 5th, 65th, 150th, 158th, and 295th Infantry Regiments; the 1st, 2nd, 87th, and 207th Field Artillery; the 11th Engineer Regiment; the 73rd, 76th, 83rd, and 615th Anti-aircraft Artillery Group and the 615th Coast Artillery Regiment; the 346th and 347th Anti-aircraft Searchlight Battalions; the 765th and 767th Anti-aircraft Gun Battalions, and the 906th Anti-aircraft Automatic Weapons Battalion. The 150th Infantry, which had replaced the 33rd Infantry, was in addition to its regular duties responsible for guarding enemy nationals in the Balboa Japanese Internment Camp. German and Italian nationals were also isolated and detained [5.01].³

The newly established Caribbean Defense Command, a theater-wide command that included the Panama Canal Department, continued to carry out its mission of canal defense by casting a wide net of naval and air reconnaissance. Army Air Corps and Navy planes conducted observation flights, and armed guards accompanied all ships transiting the canal. During the war more than 5300 combat vessels and about 8500 support craft passed through the Panama Canal. As expected the waterway provided a vital link between the oceans to facilitate the secure movement of warships, troop transports, and supplies wherever they were needed.

The greatest military threat to the canal during the war came from German U-boats. During 1942 Nazi submarines took a heavy toll on shipping in the area and were considered a menace to the Allied war effort. U-boats initially succeeded in disrupting oil supplies by sinking tankers, and deprived the Allies of valuable war materiel by attacking other cargo ships. Anti-submarine defense of the canal was stepped up by mining harbor entrances and installing submarine nets at the canal entrances. At the peak of the U-boat attacks, in June 1942, 14 U-boats had infiltrated the extended

"That night a blackout was put into effect by pulling the master switches . . . Every room in the Canal Zone probably, was an outside room for ventilation purposes. Not only lights but also the heat unit in the dry closets, for combating mildew and ever-present dampness went out. The next day the inhabitants of the Canal Zone moved about in damp, sticky clothing."²



[5.01] Japanese internees prepare to board a train to the Balboa Concentration Camp.



[5.02] "Bushmasters" crossing a jungle stream in back of Fort Clayton, June 1942.



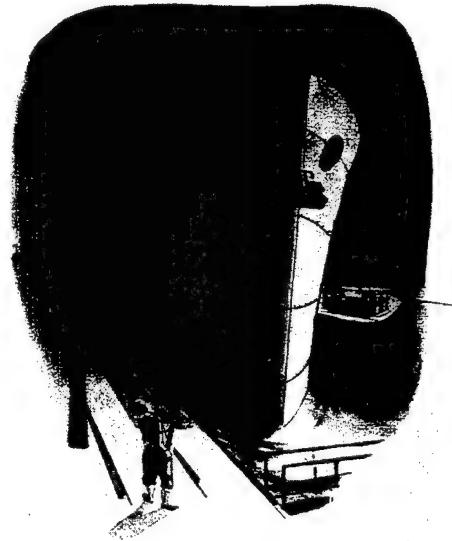
[5.03] Nurses learning to put their masks on properly during a gas mask drill, March 1942.

defense area of the Caribbean Sea Frontier. By the end of 1942, 270 ships had been lost. By early 1943, however, the tide began to turn thanks to intensified air defense and the deployment of military convoys to escort supply ships. An additional factor in the subsiding attacks was Germany's transfer of submarines to other waters in order to disrupt Allied supply lines to the newly active theater of war in Africa.⁴

The Wartime Canal Defense Mission

Fort Clayton's primary mission of protecting the locks became more important than ever with the advent of war. The mission of the Panama Mobile Force—close-in land defense—became the top priority on the logical assumption that an air raid on the Panama Canal could be next on Japan's list of objectives. As headquarters for the Panama Mobile Force and Security Command, Fort Clayton had a key role in defending the locks and the canal. The defense was provided through lock guards, utility guards, barrage balloons, smoke screens, and field artillery. Training continued to be a priority for troops stationed in the Canal Zone and outlying bases [5.02, 5.03]. Field exercises included "beach defense, preparation and occupation of defensive positions, delaying action, rapid movement by motors, and defense of airfields against parachute and ground attack."⁵

In some ways there was little difference between the prewar period and the war itself for U.S. military leaders in the Canal Zone. During the war as before it, sabotage was considered the most likely mode of enemy attack. To counteract the sabotage threat as early as 1934, the Panama Canal Department created the Lock Guards and the Department of the Navy furnished Transit Guards [5.04]. The Transit Guards boarded all ships and accompanied them through the canal, working in both directions.⁶ Authority over the guards was an issue disputed between the canal's civilian administrators and the military. The authority issue was ultimately resolved on 5 September 1939 when jurisdiction over the canal and the entire



[5.04] "Halt! Who goes there?"

Canal Zone was transferred to the Commanding General of the Panama Canal Department.

Fort Clayton conducted schools for malaria prevention, jungle warfare training, and field training for Latin American officers and troops. The jungle warfare training established at Fort Clayton would later move to Fort Sherman and become the U.S. Army's premier jungle training school during the Vietnam War. The Jungle Operations Training School would remain in operation until mid-1999. The Latin American school would eventually become the U.S. Army School of the Americas at Fort Gulick, Republic of Panama. (This mission was transferred to Fort Benning, Georgia, on 1 October 1984.)⁷

Guarding the Miraflores and Pedro Miguel Locks

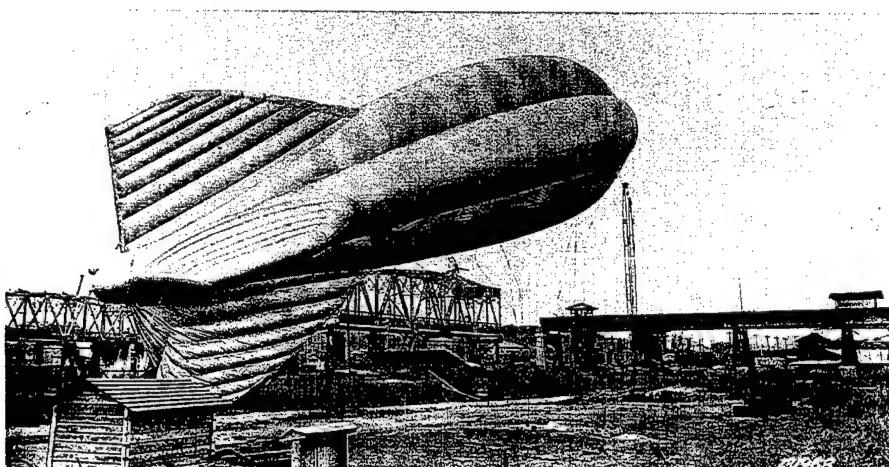
The primary means of protecting the locks from an enemy aerial attack was through the use of barrage balloons and smoke screening [5.05]. The Panama Barrage Balloon forces, which consisted of the 301st Battalion stationed at Fort Clayton on the Pacific side of the isthmus and Fort Sherman on the Atlantic side, flew their first barrage balloons on 4 January 1942. A few problems evidently developed because in March instructions were issued to civilian and military personnel on how to retrieve runaway balloons.⁸

The first smoke screen defense was tested at the Pedro Miguel Locks by the Chemical Warfare Service on 23 February 1942. The test revealed that adequate screening could be deployed within 30 minutes. The initial plan called for smoke screening at Madden Dam, Miraflores Locks, Gatun Locks, Albrook Field, the Mount Hope and La Boca Tank Farms, the docks at Cristobal and Balboa, and Summit Radio Station. This plan was drastically scaled back, however, and screening capabilities were only provided for the locks and dam. Then, in late 1943, the smoke screen and barrage balloon projects were abandoned due to a reduction in force that resulted in the relocation of the personnel assigned to these units.

A third defensive measure was known as the "Killer Net." Strung across Gaillard Cut from the high hills on either side, the net was visible from Fort Clayton. Vertical

"Fort Clayton, because of its location very near both Pacific end locks on the canal, was an ideal location for an air defense unit consisting of barrage balloons. They were located in open spaces at and around Fort Clayton, including several on the golf course in front of my quarters. They were tethered by a slender (1/4 inch) steel cable and run up several thousand feet. They were filled with hydrogen. Several of them were struck by lightning during night-time thunderstorms and made quite a fireworks display. It also rained a couple of thousand feet of steel cable for a few minutes."

Robert H. Tippett, 11th Engineer Regiment⁹



[5.05] A D-6 low-altitude dilatable-type balloon at the Miraflores Locks.

cables were suspended from a strong horizontal cable stretched between the hills. The net served to prevent low bombing runs that might cause a landslide and block the canal.¹⁰

With most of the emergency prewar expansion program completed by 1942, little new construction was necessary in the Panama Canal Zone during the war years. One exception during this era, however, was outposts—mainly airfields—established by the unified command in regions of the Republic of Panama and several Central and South American countries. Although most of the planning for these outlying positions had been completed before the attack on Pearl Harbor, little of the construction had been executed. The facilities needed included 9 air bases and airfields, 10 posts for ground forces, 30 aircraft warning stations, and 634 searchlights, anti-aircraft gun positions, and miscellaneous tactical and logistical installations.¹¹ The 11th Engineer Regiment was closely involved in these projects, particularly with the construction of fighter strips on Panama's Pacific coast. The 11th Engineer Headquarters at Fort Clayton planned and directed the construction of the Rio Hato airfield. Rio Hato became a very critical element of canal defenses because it was the only airfield outside the Canal Zone that could handle the larger aircraft used during the period, including B-17s, B-24s, and C-54s. Fighter bases were also constructed by the 11th Engineers at Chame, Chorrera, Chepo, and Jaque in the Republic of Panama [5.06].¹²

One activity that became a major undertaking during the war years was road construction. The first 7-mile stretch of the Boyd-Roosevelt Highway (the Trans-Isthmian Highway) was opened in January 1942. Until its completion in December 1944, however, the only traffic allowed on the highway was that "authorized by the Panama Canal Department as essential to the war activity, even military vehicles being banned unless they had special authorization."¹³ Also, as part of the wartime defense effort, by 1942 Gaillard Highway had been rerouted between Fort Clayton

"I was driving the lead truck in the Pacific Motor Pool when it completely crossed the Isthmus of Panama from the Pacific Ocean to the Atlantic Ocean for the very first time by motor vehicle. We cleared the vegetation from the land to make a road - The Trans-Isthmian Highway - 50 feet wide and approximately 42 miles long. It took us 28 days to complete our journey. While we were clearing the vegetation, civilians surveyed the road as we went across the Isthmus."

Robert L. Overkott¹⁴

[5.06] A dummy plane stands beneath a shelter at Camp Chorrera, Panama, 28 August 1942.



and the Panama Canal Railroad tracks, which eliminated the heavy on-post traffic previously associated with this busy road.

Although the Caribbean Defense Command was never an active theater of combat, the threat was taken very seriously and affected the civilian population. The blackouts were partial until 11 p.m., then total for the rest of the night. Automobile headlights were coated with dull red paint. All mail coming into and leaving the Canal Zone was censored, with millions of letters being examined before this policy ended in March 1945. Severe restrictions were placed on photography for the duration. Canal Zone civilian defense personnel received training in aircraft recognition and the use of gas masks by early 1942.¹⁵

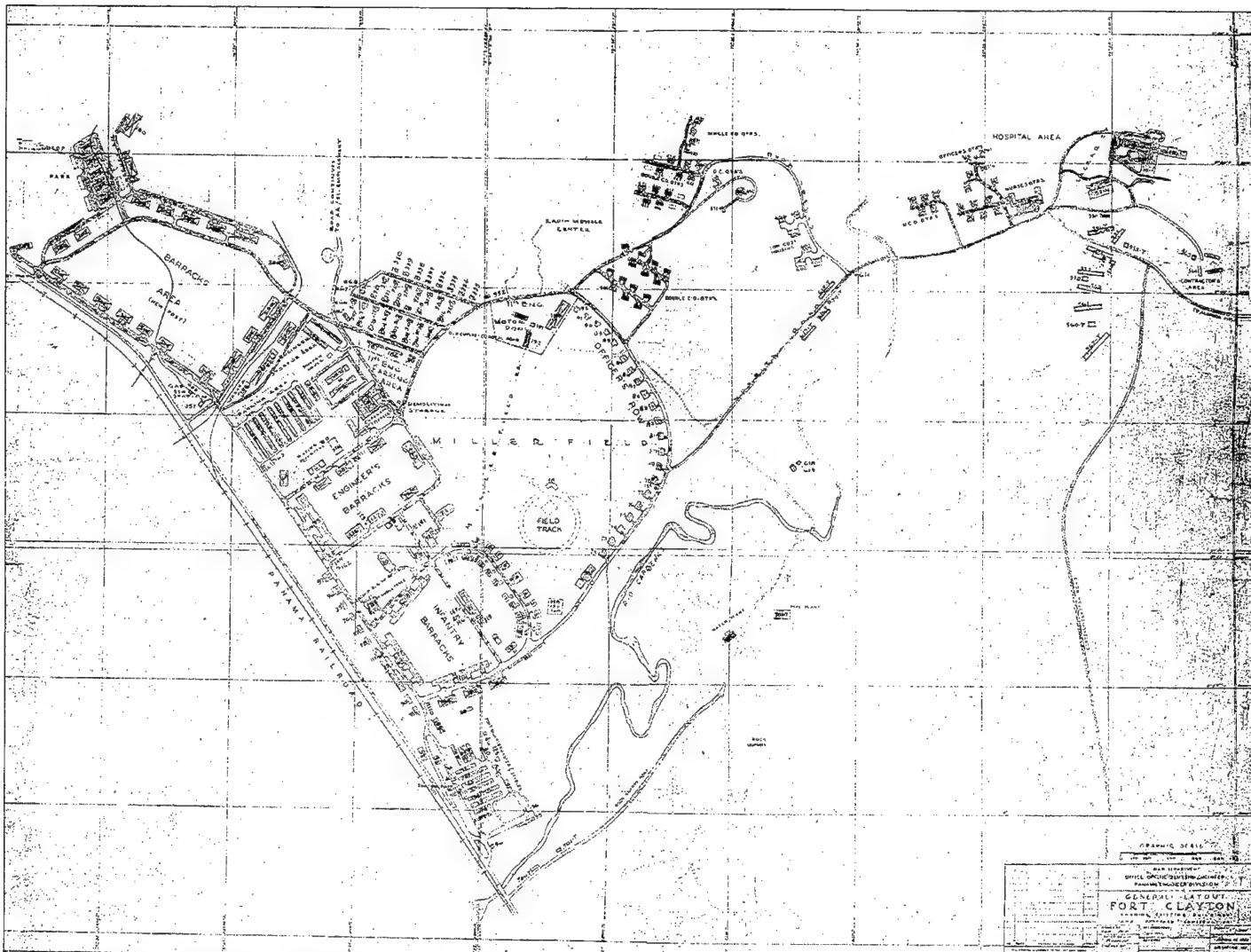
Midwar Reduction in Force

By January 1943 it had been determined that there was little likelihood of an enemy attack on the Panama Canal. The U-boat threat was receding, and Japan's military forces were busy far across the Pacific Ocean. The defense buildup had reached its peak at this point, with 67,000 air and ground force troops on duty with the Panama Canal Department. Construction projects were all but finished, and a number of units were redeployed to more critical locations, including the 158th Infantry (Bushmasters) with the 59th Engineer (C) Company attached, and the 5th Infantry. The blackout was partially lifted on 15 April 1943; streetlights could stay on until 11 p.m. and interior lights could remain on all night as long as no beam of light was cast outdoors. The 14th Infantry left Panama in June and the 11th Engineer Regiment returned to the United States in August 1943, accompanied by members of the 2nd Field Artillery. By February 1944, 38,751 officers and enlisted men had been redeployed. Outpost installations were abandoned, and ordnance and materiel were warehoused until they could be shipped elsewhere. In September 1944 the Caribbean Defense Command reverted to a prewar alert status and by the early months of 1945, Panama Canal Department component forces were submitting organization and operation plans for a postwar scenario. Throughout 1945 defensive outposts were inactivated and abandoned. On 2 September 1945 Japan formally surrendered to the Allies on the Battleship *Missouri* in Tokyo Bay. By the end of 1945 many of the defensive emplacements had been eliminated or removed, and the Panama Canal Department had set a new strength ceiling of 20,000.¹⁶

Wartime Construction at Fort Clayton

Extending Installation Boundaries

The need to expand Fort Clayton to accommodate the wartime troop buildup resulted in significant changes to the configuration of the post. By this point in Fort Clayton's development, nearly all the original fill area had been developed [5.07]. New construction took place on and around a high hill across the Cardenas River from all other post buildings, and this left an empty area that would become the logical site for future expansion. The hills forming the river valley's edges and beyond would receive nearly all the new construction for the remainder of Fort Clayton's existence, but during the World War II period this elongation to the east-northeast was the site of only a small amount of new construction.

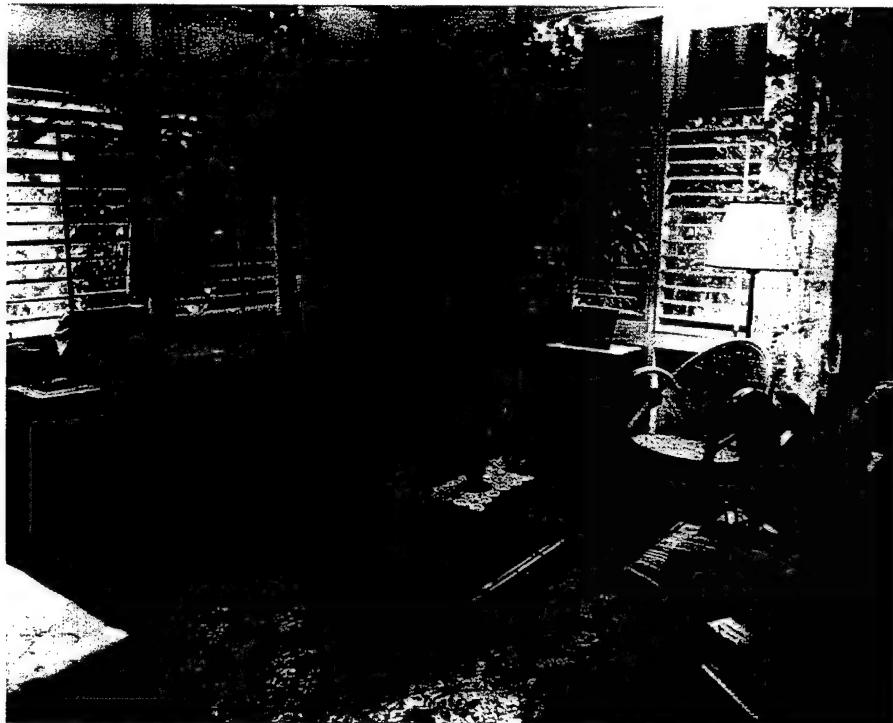


[5.07] 1942 map of Fort Clayton showing the new expansion area.

Residential Construction—Officers' Quarters With New Design Elements

Permanent officer housing constructed at Fort Clayton as part of the prewar expansion project was not finished when the United States entered the war in December 1941; the first group was completed in early 1942. The plans drawn up for the World War II expansion period quarters differed from earlier designs. The first military construction on Fort Clayton consisted of buildings with extensive screened porches for ventilation. Interior rooms were small and had few window openings. In facilities of this design the porches became the de facto living quarters and much of the interior was not fully utilized. Porches were eliminated in the designs for new quarters. Rooms were expanded and provided with significantly more window area [5.08, 5.09]. This layout provided full ventilation and much better lighting for almost every room.¹⁷

Officers' quarters were constructed for field officers, company officers, and noncommissioned officers. All were constructed on raised concrete piles with parking space and maid's quarters on the ground floor. All were of concrete frame construction with stucco-covered concrete block walls. The quarters had wide, overhanging roofs clad with red Spanish tile. Continuous mediaguas sheltered subsidiary floors. Although both single and duplex quarters were constructed, all were quite similar in exterior appearance. All duplex quarters were shared side-by-side, and each had two



[5.08] Interior of WWII-era officer's quarters showing expansive windows and the use of slatted blinds with a center adjustment rod, October 1957.



[5.09] Two 'Army wives' chat in a kitchen outfitted with Miami-type jalousie windows, 1950s.

floors of living space. These quarters came in several types, with variations in size, placement of stairs, and inclusion of a first floor half bath. These standard PCD quarters were built in great numbers at Army installations across the isthmus from 1939–1943. For this reason they became emblematic of military officer housing in the Canal Zone and were commonly known as “tropical duplexes.”

The electrical distribution system for these houses was upgraded in 1965. Nearly all the tropical duplex quarters had horizontal sliding aluminum and/or awning windows installed in the early 1970s, replacing the earlier jalousie windows.



[5.10] First wartime housing to be completed: the 300 Area NCO quarters.

The first wartime housing completed was a set of NCO quarters (Buildings 301–306, 309–316, 318–323, 325–340) located in the area between the open recreation area and the 200 area barracks [5.10]. The quarters were placed uniformly along three short roads, forming a compact housing area. All but two of the structures were two-family duplexes, each with two bedrooms. These quarters had a three-bay configuration measuring 24×44 ft. The other two were for senior NCOs. Building 307 was a larger structure measuring 26.5×58 ft, and provided two families with three bedrooms each. Building 308 was a smaller unit, measuring 28×38 ft. The only single-story unit built on Fort Clayton during this time period, Building 308 provided two bedrooms for one family [5.11].



[5.11] NCO single quarters (Building 308).

These quarters received central air conditioning in 1977. The interior and exterior doors were replaced in 1979. There was an electrical system upgrade in 1983, and the air conditioning was upgraded in 1990.

This round of construction also provided 24 company officers' quarters (Buildings 401–414, 416–417, 419–424, 427–428) and six field officers' quarters (Buildings 426, 430–434) [5.12]. Buildings 401–414 formed a block located immediately northeast of the temporary officers' quarters (Buildings 88–92). At this point, the terrain started to become hilly, and Morse Road (where all these quarters were located) followed the crest of the hills until it swept downward toward the Cardenas River where it would meet up with Hospital Road just before the bridge. The remaining quarters (Buildings 416, 417, 419–424, 426–428, and 430–434) were somewhat strung out to the northeast along the north side of Morse Road. The field officers' quarters were placed the farthest along, with Building 434 across the street and partway up a high hill. The dramatic location and view out over the river valley gave this structure high status, and it would become home to Fort Clayton's Commanding Officer. The two-story company officers' quarters measured 26.5 × 58 ft. They were basically the same as the NCO quarters of the same size (Building 307) but had an extra half bath on the first floor. The two-story field officers' quarters were single-family units measuring 28 × 44 ft, and provided four bedrooms.

The interior and exterior doors of the company and field officers' quarters were replaced in 1979, and central air conditioning was installed in 1988.

Wartime Operations and Support Facilities

Coast Artillery Headquarters (Building 200)

Construction of Building 200, the Coast Artillery Headquarters building, by the firm of Tucker, McClure, Thompson, and Markham Company of Los Angeles, California, began at the same time the barracks were built in the same area but the building was not completed until 13 April 1942 [5.13, 5.14]. Located between the new Coast Artillery barracks and the quartermaster area, the building was sited on a knoll overlooking the new parade ground. Constructed at a cost of \$31,000, the two-story building contained 8802 sq ft and measured 76 × 38 ft. Like the Coast Artillery bar-



[5.12] Company officers' duplex quarters (Buildings 411–413), 23 September 1953.



[5.13] Coast Artillery Headquarters Building, Fort Clayton, October 1942.

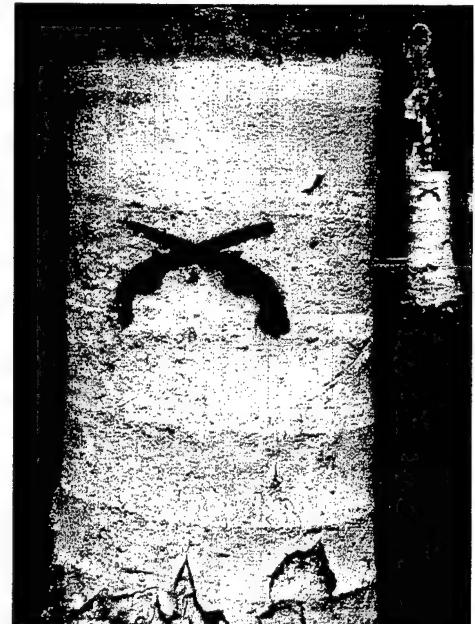
racks, Building 200 was built on a concrete foundation with concrete floors covered with quarry tile, concrete and stucco walls, and a clay tile roof. Similar buildings were constructed at Forts Kobbe and Gulick.¹⁸

The building was fronted by a porte-cochere and a flag pole. The first floor contained a front entry hall, several offices, separate restrooms for enlisted men and officers, a rear entry hall, and stairs accessing the second floor. The second floor contained a closet, an officers' restroom, two vaults, and several offices.

Sometime before 1969 the temporary partitions on the second floor were removed, opening up a large space that was used as a conference room. Three small spaces remained, serving as offices for the Post Commander, the Executive Officer, and a secretary. The vault located above the front entry was removed and the space converted to a waiting room. At the same time, exterior wood frame and screen windows were replaced with glass. In 1969 these windows were reduced in size and replaced with aluminum awning windows. Windows were further reduced in size in 1984 when security screening was applied to openings. The building received central air conditioning in 1988, at which time the building was serving as headquarters to the 324th Support Group.

Anti-Aircraft Defense Command Post

An anti-aircraft defense (AAD) command post, accompanied by Signal Corps radio transmitters, was established at Fort Clayton as part of the World War II defense effort. Located on what came to be called "Gun Hill," the site was on top of a hill north of the New Post area [5.15].



[5.14] Insignia on palm trees in front of Building 200.



[5.15] Anti-aircraft Defense Command Post, Gun Hill.

The AAD command post (Building 3056) was completed in March 1942. The underground bunker facility, which was built entirely of reinforced concrete, had two entry doors, both of which connected to an interior horizontal corridor. The facility included a powder room, battery room, switchboard room, radio room, commanding officer's consultation room, and both enlisted men's and officers' latrines. The bunker was air-conditioned and gas-proofed. In addition to the command post, the site included a Quonset hut (Building 3055), revetment (Facility 3057), metal shed (Building 3058), ammunition storage facility (Building 3061), and two antennas.¹⁹ In December 1943 eight magazines were constructed along the road to the AAD command post. These small structures measured 8 x 8 ft, and were constructed of concrete, concrete block, and corrugated iron.

By 1973 the site had been transferred to the Military Police, who used it as a kennel and training area for police dogs [5.16]. The Quonset hut was a shelter facility with 12 kennels, and included a food preparation room, treatment room, and two isolation kennels. In 1998 an obstacle course for the dogs was constructed. Obstacles included a window, barrel, tunnel, jump, and an A-frame set of steps. The AAD magazines were demolished in 1975.

Aircraft Fuel Storage Facilities

In 1943 the Panama Canal War Reserve area at Fort Clayton was established. Used as an aircraft fuel storage facility, the 11 underground steel tanks were managed by the Army Air Corps at Albrook Field.

The site was officially transferred to the U.S. Army at Fort Clayton in 1974. In June 1977 the site became a test facility for the Tropic Test Center (TTC). The U.S. Army

[5.16] A military police dog at work.



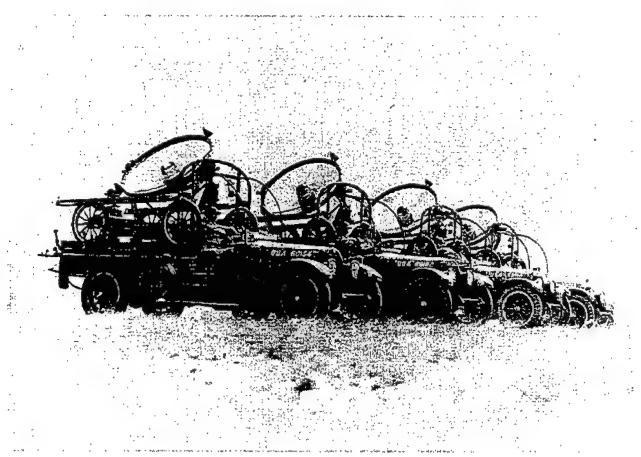
TTC was first established in 1964, probably in conjunction with increasing U.S. involvement in Vietnam, with test sites scattered across the isthmus. The sites making up the TTC contained facilities for determining the effects of a humid tropical climate on various Army products and materiel. The TTC was headquartered at East Corozal, and the various other sites were used for their particular environmental qualities (marine, forest, etc.). Location of the facility at Fort Clayton was due to installation realignments made necessary by the Panama Canal Treaty and the availability of USARSO troops for inflicting 'tropical treatment' on the equipment.²⁰

Searchlight Sheds and Regimental Garages

A number of projects were begun in 1941 but not completed until 1942. Located in the Artillery Park area of Fort Clayton, this round of construction included three searchlight sheds, two standard regimental garages, an ordnance storehouse, artillery engineer's warehouse, quartermaster maintenance and motor repair shop, and temporary shed [5.17, 5.18]. The three searchlight sheds (Buildings 183-185) and two standard three-car regimental garages (Buildings 181 and 182) were available for use on 13 January 1942. These five buildings, constructed under contract to Novey and Luttrell Company, were laid out longitudinally parallel to each other. An asphalt road encircled the complex of buildings. Each of the five buildings measured 109 x 30 ft. Constructed on a concrete foundation, floors were reinforced concrete slabs. Each building was enclosed and supported an asbestos-protected metal roof on steel trusses.

Warehouses

The Ordnance Storehouse (Building 179), located in the Artillery Park, was accepted from the contractor, Fred J. Early, Jr., of San Francisco, California, on 12 January 1942. The storehouse was sited perpendicular to the regimental garages



[5.17] Searchlights of Battery C, 4th Coast Artillery Corps, on exhibit at a Panama Canal Department Review.



[5.18] Standard regimental garages and searchlight sheds.

and searchlight sheds, and it was similar to them in design. Running through the center of the single large storeroom was a two-ton monorail. A double wood sliding door was located at each end of the building.

The Artillery Engineer Warehouse, Building 180, was a 183 x 62 ft facility divided up the middle by a concrete firewall, which provided two storage rooms accessed from outside by two loading platforms with 10 x 10 ft sliding doors. The roof was APM, the preferred roofing material for storehouses at that time. The storage facility, which also contained an office space, was used to store food and other perishable items for sale at the nearby commissary.

In 1965 Building 180 was modified and redesignated as a craft shop, which comprised a wood shop, auto shop, and photo lab. In 1983 the shop was expanded to include a tool room, studio classroom, sculpture studio, and portrait studio.

The Quartermaster Maintenance and Motor Repair Shop (Building 176) was constructed by Novey and Luttrell and delivered on 13 January 1942. The building was located in the quartermaster area at the intersection of Vick and Coiner Streets near the engineer motor pool [5.19]. Constructed of reinforced concrete and steel with a roof of APM on steel trusses and frame, the building measured 297 x 36 ft. The outside walls were 8 in. concrete block. The interior of the building was divided into 15 bays, and included an office, storage room, electrical shop, plumbing shop, carpenter shop, paint shop, auto painting area, and other minor spaces. The construction of this building was undertaken in order to replace several small wood structures built between 1920 and 1923.

The construction of Building 177 in March 1942 completed the quartermaster area of Fort Clayton. Originally planned and designed as a hay shed before it was completed the building's function was changed to a storehouse for food supplies. Located immediately south of the commissary building, the new storehouse was laid out parallel to the new railroad spur to accommodate loading and unloading of



[5.19] Quartermaster maintenance and motor repair shop.

materials. Unlike the other buildings in the quartermaster area, Building 177 was a temporary structure on a concrete foundation with drop siding walls. The top 2 ft of the walls surrounding the building were opened for ventilation, screened with wire for security and protection against mosquitoes. The metal roof provided an overhang to prevent rain from entering the windows and ventilation openings. The building was bisected by a firewall and enclosed nearly 20,000 sq ft.

Wartime Community Buildings

Bowling Alley

A new bowling alley (Building 101) was completed in 1943 to replace the old one. Constructed on a concrete foundation with concrete floors, concrete-and-screen walls, and a wood-and-tarpaper roof, the new 8-lane bowling center was twice the size of the old facility. It was located on Morse Avenue next to Building 172 (the fire station).

The bowling alley received various modifications and rehabilitations throughout the 55 years of its life, including the addition of a snack bar in 1982 and the installation of central air conditioning in 1987. In 1959 the mediagua, which encircled the sides and rear of the building, was removed and the large screened windows were enclosed with decorative concrete block. Automatic ball returns and hand dryers were installed in 1964.

Post Chapel

Completed in January 1944, the Fort Clayton Post Chapel (Building 64) was a standard temporary wood frame structure. Constructed at an estimated cost of \$15,000, the building enclosed 3202 sq ft and accommodated 500 persons. Measuring 118 × 27 ft, the chapel was built on a concrete foundation, with concrete and wood floors, wood and screen walls, and a roof of corrugated iron. Other chapels of this standard design were constructed at several military bases in the Canal Zone, including Corozal and Fort Amador. The Fort Clayton chapel included a mahogany pulpit, lectern, communion rail, confessional, and pews with knee-rests. The two offices were finished in cement plaster.

In 1953 the chapel was enlarged to measure 118 × 36 ft. This temporary structure was demolished and replaced with a permanent structure in 1964.

The Canal Zone Medical Construction Program

The Long Struggle for Dedicated Military Hospitals

For military forces stationed in tropical settings, where serious communicable diseases thrive, medical care is an ongoing high priority in order to sustain combat readiness. In Panama, the single largest construction project completed during this

period was a medical complex anchored by Building 519, the 528-bed Sector Hospital at Fort Clayton. The Sector Hospital was the largest of three constructed for military forces in the Canal Zone during the war years. The long struggle for authorization and construction of dedicated military hospitals in the Canal Zone dated back almost to the earliest days of canal defense, and involved repeated debates and—finally—a war of letters between the Panama Canal Department and The Panama Canal.

The debate was foreshadowed in March 1917 by Brigadier General Clarence R. Edwards, commander of U.S. troops in the Canal Zone:

Because protection of the canal cannot be separated in essence from other Canal functions, matters must frequently arise concerning which, properly enough, different opinions may be held. In this event such matters are certain to become the subject of more or less extensive correspondence or debate, and at times, perhaps, of serious disagreement.³³

On 30 June 1921 the U.S. Senate and House of Representatives addressed the issue of medical treatment for military personnel assigned to the Canal Zone. Funds were allocated to The Panama Canal to provide medical care for military personnel in Gorgas Hospital on the Pacific side of the isthmus, and in Margarita Hospital on the Atlantic side. Both of these hospitals were owned and managed by the Canal Zone government. In addition to civilian medical personnel, Gorgas Hospital was staffed by Army doctors on 4-year assignments. These military professionals drew their regular Army pay as if they were stationed at a military hospital but they ultimately were accountable to the Governor of The Panama Canal, not the Commanding General of the Panama Canal Department.

Treatment of minor illnesses, minor injuries, and dental care was provided at post dispensaries. One of Fort Clayton's dispensaries was a 25-bed temporary wood building located near the future site of Building 519, and a second dispensary was located in Building 21. But nowhere within the Panama Canal Department was there a dedicated medical facility for inpatient acute care.

As early as 1920 installation commanders requested authority to build military hospitals, justifying their requests by asserting that “reliance upon the civilian treatment facilities at Gorgas Hospital [is] detrimental to command efficiency.”³⁴ Officials of the Canal Zone government, however, objected to the construction of dedicated military hospitals arguing that Gorgas and Margarita hospitals met the medical requirements of military personnel, their family members, and civilians working on installations.

As the number of military personnel assigned to the Canal Zone rose from one Marine battalion in 1903 to nearly 10,000 soldiers in 1935, the Chief Health Officer of The Panama Canal realized that the cost of providing medical care would be extreme. After World War I many Canal Zone military leaders began to have reservations about treating troops at Gorgas Hospital. One of the greatest concerns, though not the only one, was financial. In 1939 alone the Army paid The Panama Canal \$233,391 in hospitalization fees.

Another Wartime Challenge: Disease and Medicine in the Tropics

Leading the fight against disease in the Canal Zone were the staff of the Army Medical Department. The primary mission of the Army Medical Department, dating back to its inception during the Revolutionary War, was to maintain the health of the Army in order to protect its fighting strength and therefore sustain its readiness for war. The only changes in mission since that time have been in the scope of the task and the circumstances in which the mission must be accomplished. Responsibility for the execution of this mission was vested in the Surgeon General.²¹

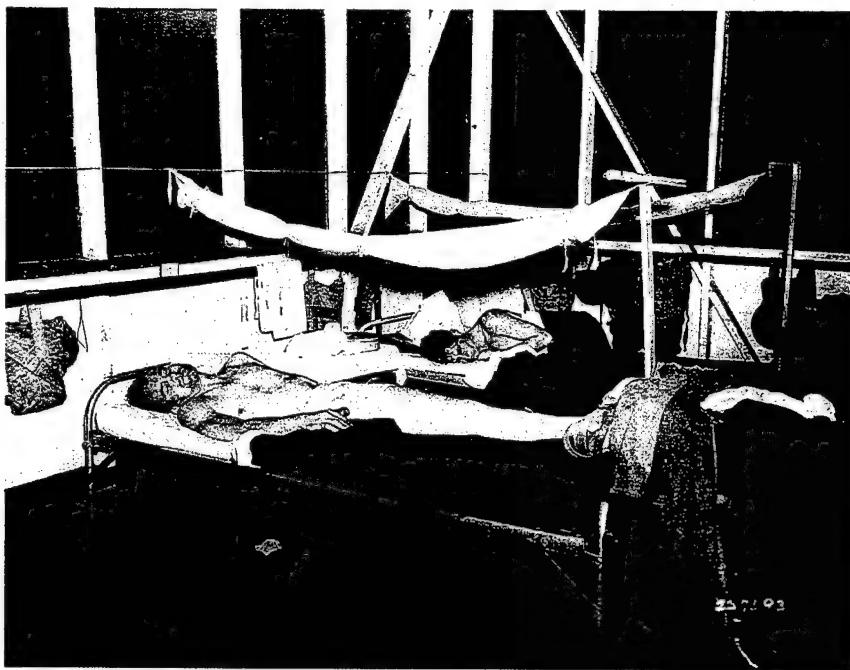
Yellow fever had been one of the major killers of the French canal construction effort. Although the Isthmian Canal Commission and the heroic efforts of Dr. William C. Gorgas eradicated yellow fever from the area, other tropical diseases continued to plague residents of the Canal Zone. Beginning in 1939, the huge prewar troop influx once again brought health issues to the forefront of military concerns in the Canal Zone. Among the diseases transmitted by insects, malaria was the most common and was one of the top three illnesses treated by doctors during the era. The other two were tuberculosis—the leading cause of death in the Republic of Panama—and venereal disease.²²

“Recipe for a Malaria Cocktail: Mix quinine, syrup, red food dye, and alcohol. Serve in bottles on restaurant tables for patrons.”²³

Malaria. The number of diagnosed malaria cases in military personnel sharply rose as large numbers of new troops were stationed to the Canal Zone and vicinity. Due to the scarcity of billeting and construction materials, non-immune troops were often assigned to mosquito-infested areas before adequate protection could be provided. Between April and September 1942 malaria reached epidemic proportions among the troops, but soon after this the number of new cases began to decline.²⁴ At the height of the epidemic 111.7 of every 1000 individuals were being treated for malaria.²⁵ The problem was so serious that training and maneuvers were often cancelled. Leaders of the military communities in the Canal Zone recognized “the absolute necessity of malaria discipline and control.”²⁶ Funds in the amount of \$800,000 were appropriated during fiscal years (FY) 1945 and 1946 for malaria control efforts.²⁷

At outpost stations, a single case of malaria resulted in the implementation of a dusk-to-dawn curfew [5.20]. Those soldiers on guard duty were required to wear gloves and netting around their heads. No part of the body could be exposed to a possible mosquito bite. Troops were required to sleep under mosquito netting, and bed checks were made to make sure soldiers were following regulations.²⁸

U.S. Army School of Malariaiology. As military campaigns expanded into the Southwest Pacific during 1943 there was a sharp increase in the need for training in tropical disease control and mitigation. A plan to create an Army school of malariology at Fort Clayton was initiated during the summer of 1943 and authorized in September. In addition to the theoretical training it would offer, a malariology school in the Canal Zone would provide practical field experience in a tropical environment. Trainees could learn in a setting where anti-malaria initiatives had been tried and used successfully for years. The Caribbean Defense Command provided operational and teaching personnel for the school. The latter included sanitary engineers, entomologists, and parasitologists. Activated in February 1944, the school offered a 4-week course of study emphasizing malaria survey and control tech-



[5.20] Patients in ward for malaria prevention in a hospital at an outpost position, February 1943.

niques as well as basic theoretical topics. By the end of the war, 16 courses for officers had been completed, and the graduates of these courses were instrumental in implementing the Army's malaria-control program.²⁹

The educational complex was located in three barracks buildings at Fort Clayton. The first of these contained the school's administrative offices, a lecture room that accommodated about 80 people, various classrooms, two laboratories, a conference room, and a library. The second building provided billeting and mess facilities for enlisted faculty and students. The third building was

dedicated to additional billeting, both for enlisted personnel and officers. The U.S. Army School of Malariology continued its mission well into the 1960s as part of the U.S. Army Medical Research and Development Command. As such, it is credited with devising more accurate laboratory methods for identifying, testing, and treating a variety of tropical infectious and parasitic diseases.³⁰

Venereal Disease. Venereal disease was prevalent among Canal Zone troops as early as World War I, and the number of cases escalated dramatically during the early years of the prewar buildup. By 1939 there were 44.5 cases diagnosed per

month, but the rate of infection began to drop between 1941 and 1942, and decreased again by June 1943. Decreases were continuous, reaching a low of 9.3 cases per thousand per year in August 1945, which was actually lower than the rate in the United States during the same time period. The decline was attributed to several factors, including education of troops in causes and symptoms of the disease, improvements in treatment methods, and the cooperation and support of the Panama Canal Department Commander, the Chief Health Officer of The Panama Canal, and of the government of the Republic of Panama.³¹

Other Tropical Maladies. In addition to treating malaria, tuberculosis, and venereal disease, military doctors saw and treated cases of typhoid, dysentery, measles, mumps, whooping cough, chicken pox, and fungus infections. By far, the most common kind of disease afflicting Canal Zone soldiers during this era was respiratory infection. In 1940, 835 individuals were admitted to a dispensary; approximately 187 cases of respiratory infection were treated, compared to about 56 cases of malaria, 66 cases of venereal disease, and 116 injuries. During the first four months following the opening of the hospital at Fort Clayton, doctors there were treating primarily cases of bronchitis and tonsillitis.³²

In 1922 a proposal was submitted to the War Department that the Army either be authorized to run its own hospitals or that Gorgas Hospital to be transferred to the Army for administration. The Governor of The Panama Canal objected, noting that civilian patients outnumbered military patients by a very wide margin.³⁵ By 1937 the Panama Canal Department Commanding General had the support of the Surgeon General in his request for separation of hospital services from The Panama Canal. Nevertheless, the War Department determined in June 1938 that "a material increase in hospitalization facilities in the Panama Canal Department is not of sufficiently high priority to warrant action at this time."³⁶ However, the Surgeon General soon argued his case to the War Department and was successful in getting the decision reversed. Although individual care may have been satisfactory in normal circumstances, said the Surgeon General, a dedicated military hospital in the Canal Zone would be imperative during war.

Construction of three military hospitals in the Canal Zone was included in the 1939 \$50 million defense augmentation program for new construction. In March 1939 the Panama Canal Department was notified that the proposal was approved. Response from Governor Ridley of the Panama Canal Zone was almost immediate. On 25 April 1939 Ridley addressed a five-and-a-half-page letter to the Secretary of War with a copy furnished to the Commanding General of the Panama Canal Department. In this letter the Governor opposed the construction of these new military hospitals because it would create a duplication of facilities, equipment, and personnel that were already available at Gorgas Hospital. In Ridley's opinion:

[T]he decision to request funds for the construction of two more general hospitals in the Canal Zone has been made without weighing all of the important considerations upon which final conclusions should be made. I believe the whole matter should be carefully reconsidered so that all of the effects may be foreseen before the Department becomes committed to large expense for the initial duplication of available hospital facilities as well as for the continuing expense of additional personnel, which the present scheme would entail. I feel sure if the project is consummated without advising the Bureau of the Budget and Congress of the facts as outlined herein, there will be a reaction unfavorable to the Army as well as The Panama Canal.³⁷

The PCD Commanding General, Major General David L. Stone, responded to the Governor's letter, somewhat indirectly, with one of his own addressed to the Surgeon General, dated 27 April 1939. General Stone cited the large number of troops expected in the Canal Zone in anticipation of war and asserted that Gorgas Hospital would not be able to accommodate this increased population. He also pointed out that the Third Locks project would drastically increase the population in the Canal Zone, further overloading the existing civilian inpatient facilities. Finally, General Stone accused Ridley of being more concerned about loss of hospital revenue than anything else.

In his letter to the Surgeon General, Stone provided some additional background that helps to explain his own vehemence on this issue. At an earlier Army-Navy-Canal Zone Joint Defense Plan meeting, Stone explained, Governor Ridley had declared that "the needs of the employees on the Canal Zone, both white and col-

ored, would be given priority at Gorgas Hospital and the Army and Navy patients would be given such accommodations as remained after the needs of the Canal Zone employees were met.”³⁸ Stone made it clear that PCD military leadership could not tolerate “any such arrangement whereby our men, who are defending the canal, would be left in such a secondary and uncertain status as to hospitalization.”³⁹ In response to Stone’s letter, the Surgeon General supported the PCD request for control of its own military medical facilities.⁴⁰

The Secretary of War finally settled the matter after making an inspection of Panama Canal Department installations and reviewing its defense plans in August 1939. The Secretary fully supported the PCD military leadership, and the War Department officially approved the construction of the Fort Gulick Hospital, with 250-beds, on 26 August 1939. Approval for the construction of the Fort Clayton Hospital, with a capacity of 300 beds plus and ancillary facilities such as nurses’ quarters, was granted on 30 September 1939.

The funding approved for the Fort Clayton facilities totaled \$475,000, but it turned out that this was not enough money to complete the job because of a problem with the estimate. A staff officer had originally estimated the funding requirement without consulting the Medical Department, the Surgeon General, or the Quartermaster General. The staff officer’s construction cost estimate was \$4000 per bed, but this turned out to be 20 percent lower than the Quartermaster General’s more accurate figure of \$5000 per bed. The PCD’s original underestimate carried through to an extra 100 beds that would be needed for Army Air Corps personnel, who were stationed at the adjacent Albrook Field and would be using the new Fort Clayton Hospital facilities. The Air Corps contributed \$400,000, or \$4000 per bed, to defray construction costs of these extra 100 beds—again, 20 percent below the actual per-bed construction cost. Plans for the number of beds in each hospital were based on both peacetime and wartime estimates. The original plans for the Fort Clayton hospital had called for 528 beds, but by the time Congress finally authorized funds the construction costs had increased and, consequently, the number of beds had to be reduced to stay within budget.

Starting even before construction was authorized, representatives of the PCD Office of the Quartermaster General, the Surgeon’s Office, and the Constructing Quartermaster’s Office conducted land surveys of the area in 1938, 1939, and early 1940. The main purpose of these surveys was to select appropriate sites for the hospitals proposed at Fort Gulick, Howard Field/Fort Kobbe, and Fort Clayton. Considerations in hospital site selection included elevation (preferably at least 150 ft); orientation (an east-west axis was preferred in order to capture prevailing winds for ventilation); view (restful yet panoramic); and proximity (partial seclusion was preferred to isolate patients from installation activity and noise).⁴¹

Site Selection

The Quartermaster General of the Army visited the site selected for the Fort Clayton hospital in early 1940. It was located about a quarter-mile from the officers’ quarters on Muir Avenue. After evaluating the site he notified the Commanding General that a

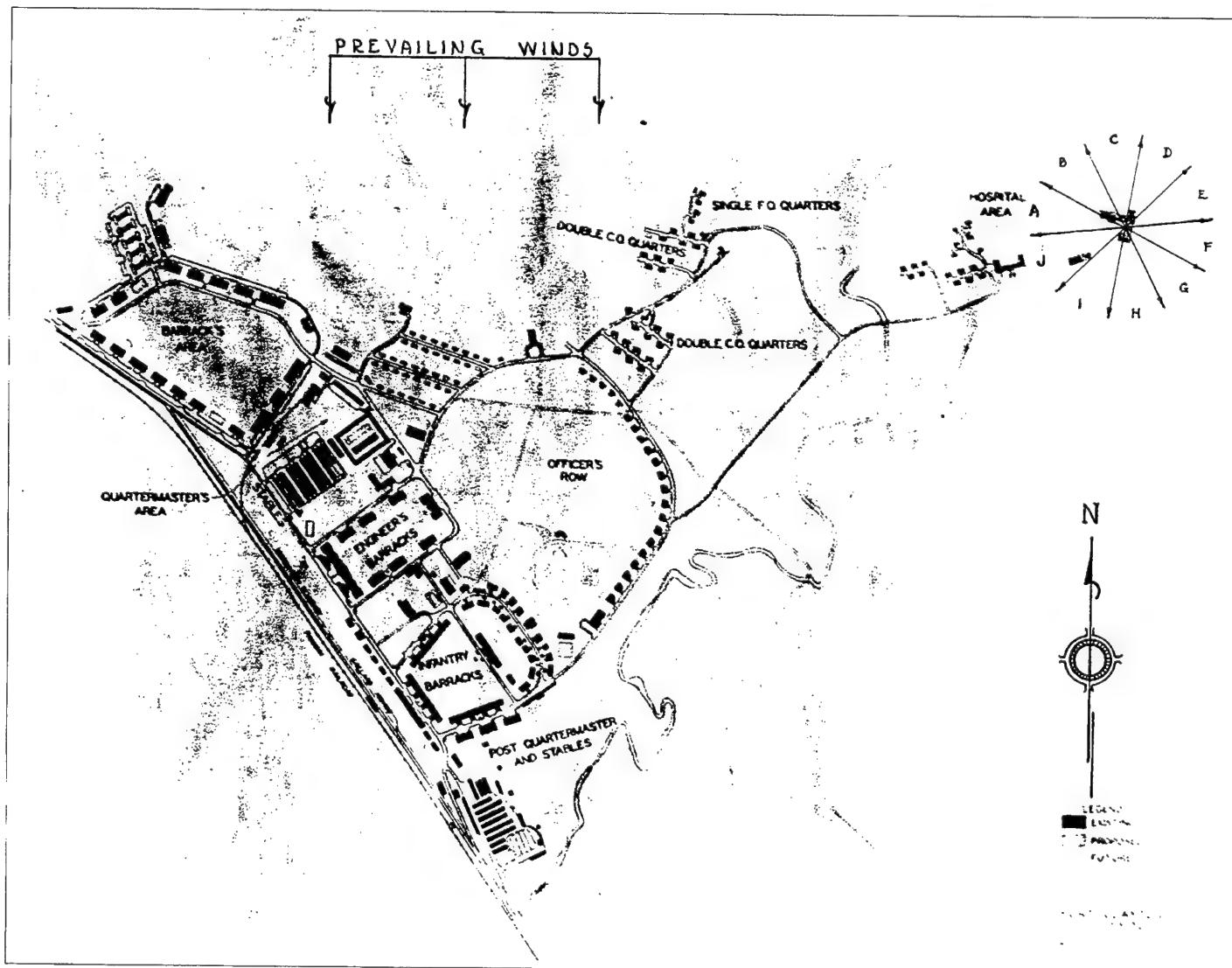
new location should be sought because, due to the site's high elevation, it would be too costly to prepare for construction. In accordance with the Quartermaster General's opinion, a new site on the other side of the Cardenas River was selected, and this new site was formally approved on 8 May 1940. Located on the southeast side of the post near a stretch of the historic Las Cruces Trail, the new hilltop site met the desired criteria for promoting good ventilation and a restful environment [5.21].

This choice of location did, however, require construction of a new steel-and-concrete bridge over the Cardenas River. This structure carried Hospital Road 26 ft above the river. Drawings for the bridge were prepared in July 1940, and construction began shortly afterward.

The Sector Hospital (Building 519)

Based in part on a request by the PCD Commanding General it was decided that the new hospitals would be permanent structures designed in the tropical style. The Planning and Training Division of the Surgeon General's Office developed plans for

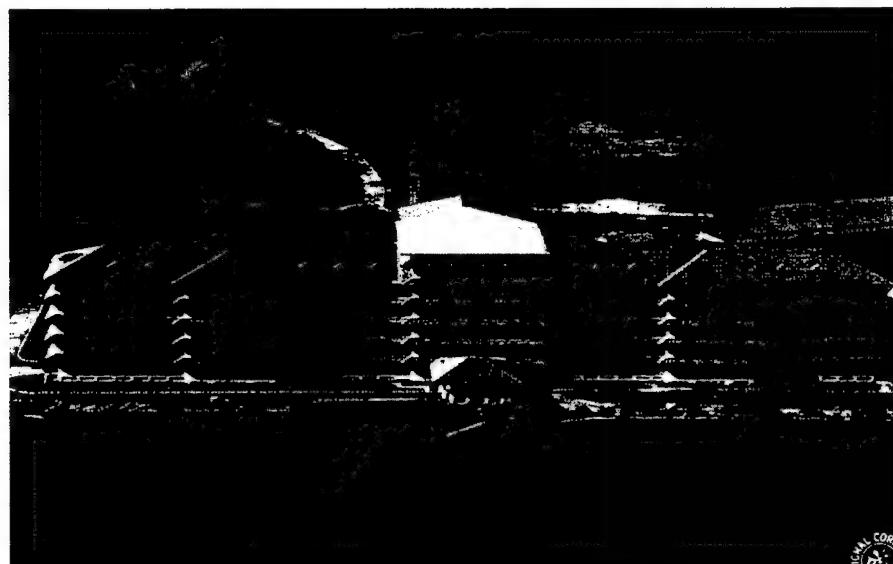
[5.21] Map of Fort Clayton (c. 1943) showing prevailing winds.



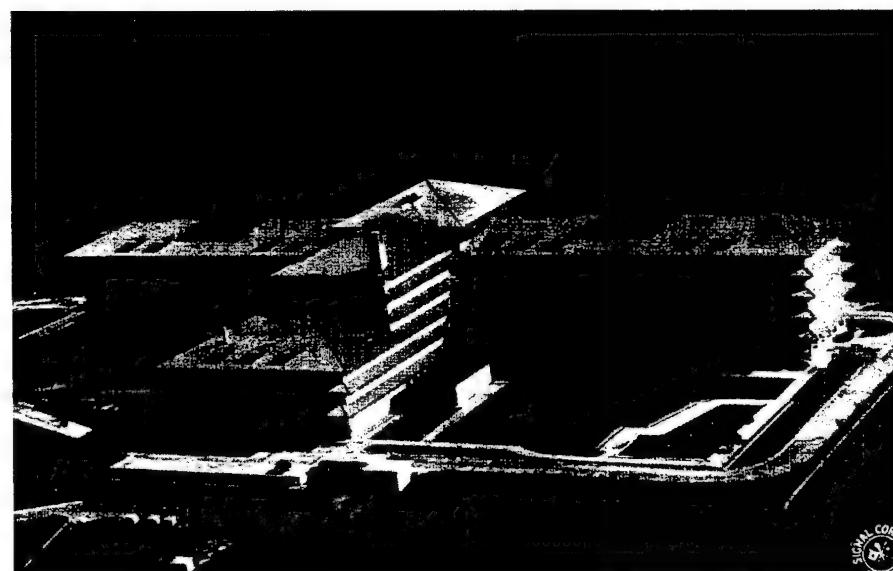
hospital construction and repair in conjunction with the Office of the Quartermaster General. Final architectural plans for the buildings were drawn by the Surgeon General's Office. A complete set of architectural and engineering plans for the hospitals was turned over to the Panama Canal Department in 1940.

On 2 November 1940 the PCD Quartermaster General authorized the letting of contracts for the construction of the three hospitals. As a result, contracts were awarded to MacDonald Construction Company and G. L. Tarlton, Inc., and grading and construction began at all three sites.

The Fort Clayton Sector Hospital (Building 519) opened on 3 September 1943. Its nominal capacity of 378 beds was expanded to 700 beds by placing cots on the porches. The dispensary at Fort Amador immediately transferred 349 patients to the hospital, and by December the hospital census had climbed to 585 patients. The cost of construction was about \$2.5 million [5.22, 5.23].



[5.22] Fort Clayton Sector Hospital (front view) shortly after completion (c. 1943).



[5.23] Fort Clayton Sector Hospital (rear view) shortly after completion (c. 1943).

The hospital contained 249,049 sq ft, making it the largest single building in the Canal Zone. (The Panama Canal Commission Administration Building in Balboa, by comparison, contained only 75,000 sq ft.⁴²) The structure measured 514.5 × 62 ft. The foundation was of concrete, with concrete and tile floors, stucco and concrete walls, and a clay tile roof. The facility was designed to be fireproof and impervious to termites. The main entrance comprised a pair of massive bronze doors which, according to one senior building custodian, required 14 men to remove for maintenance and repair purposes.⁴³

The hospital faced north, with east, west, and south wings. The south wing was three stories tall and the east and west wings were each five stories tall. The main building was seven stories high (in addition to the ground floor). The ground floor, which housed the lobby, was finished in marble and brass and furnished with locally made mahogany chairs and settees. In addition to the lobby, the ground floor housed an information office, Red Cross office, registrar's office, outpatient clinics, receiving and disposition office, medical supply area, a number of storage and utility rooms, and the mortuary and autopsy room. The Otis elevator off the ground floor lobby was not the original one purchased for the building; the first one was "lost to hostile submarine action while en route to the Canal Zone."⁴⁴

The first floor of the hospital (above the ground floor) contained a lobby finished in marble; a telephone exchange; the dental, eyes-ears-nose-and-throat, and dermatology clinics; cardiac and metabolic clinics; pharmacy; bakery; refrigerators; attending surgeon's office; and air conditioning machinery. The east wing on this floor housed two 24-bed wards, two triple rooms, two single rooms with adjoining baths, a nurses' room with adjoining toilet, a small serving kitchen, and toilets and baths for the two wards. Also on this floor was the PCD dental laboratory.

Air conditioning was in its earliest and experimental stage of use, but it was considered a requirement for some areas of the hospital. Those areas included parts of the dental clinic where delicate and expensive instruments would deteriorate without some type of humidity control. The majority of the Dental Corps was assigned to the dental clinic at the Fort Clayton hospital. In order to provide dental care to soldiers at installations out of range of the Panama Canal Zone (i.e., the temporary bases established outside the Canal Zone for wartime defense purposes), a mobile dental unit was established.

The second floor contained 112 beds laid out similarly to the ward area of the first floor. The south wing of the second floor included a cafeteria-style 256-seat mess hall with kitchen, mess office, and scullery.

The third floor of the hospital included two wards similar to those on the first and second floors, as well as three air conditioned operating rooms, a radiology department, a room for cystoscopy, and a room for application of orthopedic prostheses. The ward in the east wing was used for the care of male officers.

On the fourth floor was located an air conditioned obstetrical section, which included a delivery room, labor room, double and single rooms, sterilizing and util-

ity rooms, serving kitchen, nursery, baby bath, and nurse's station. Also on the fourth floor were facilities for the care of psychiatric patients. The 12-bed psychiatric ward included two single rooms for severely incapacitated patients and two single isolation rooms. Post-surgical patients were also cared for on the fourth floor.

The fifth floor of the hospital included a medical reading room with four cubicles, a general reading room, librarian's office, and men's and women's toilets. The south wing of the fifth floor contained an assembly room with seating for 250 people, stage with disappearing footlights, dressing room, and small serving kitchen. The assembly room was used frequently for the showing of pictures and for USO (United Service Organizations) shows touring the area. The original fifth floor east and north wings included storage rooms and elevator machinery rooms.

The sixth floor center area included a recreation room equipped with radios, billiard and ping-pong tables, lounging chairs, and a workshop. An elevator machinery room was also on this floor.

Architecturally, the Fort Clayton hospital is an excellent example of a building designed for the tropical climate and was unique among military hospitals, except perhaps for its companion hospital constructed under the same program at Fort Gulick. However, a few modifications of standard tropical style turned out to be necessary due to the building's utilization and size. In order to prevent rain from entering the porches and screened windows, a 7 ft wide mediagua extended from the perimeter of the building on each floor. The mediaguas were not originally designed to keep the porches entirely dry during driving rains since these spaces were intended mainly for occasional use by patients when weather permitted. But because the porches sometimes had to be used as ward space during emergencies, they had to be retrofitted to keep the rain entirely out throughout the year. To accomplish this, jalousie windows were installed. Also, because the porches were deep enough to eliminate most natural light from the wards, artificial lighting was required throughout the building. Ridge ventilation was used to help cool the hospital since the building was too large to rely completely on cross-ventilation through the screened windows.

By April 1943, as the threat to the canal was diminishing, defense alert status was downgraded and a reduction in troop strength had already begun. The Sector Hospital hit its peak size in 1944, but within 2 years demobilization had reduced hospital capacity to 25 beds.

The facility was inactivated as a hospital on 15 August 1954 and redesignated as the Fort Clayton Dispensary. Over the ensuing years, much of the building's space was reused for administrative and residential purposes.⁴⁵

In February 1957 the hospital underwent another change in designation and became the Pacific Area Administrative Center. A 100-man BOQ for visiting Latin American military officers was located on the fourth floor. Major window

alterations were made in May 1958, when the louvered windows were replaced. In April 1964 the west wing of the third floor was modified and reutilized as a BOQ for up to 32 men.

In January 1970 the exterior porch windows on the ground floor were replaced with fixed glass aluminum frame windows to accommodate air conditioning of the building. By May 1972, Building 519 was the centralized in-processing center for Army personnel assigned to the area. The helipad was in place by May 1973, and, at the same time, windows were again replaced. In July 1981, the roofing tiles from the mediaguas were removed, cleaned, and reinstalled after deteriorated lumber had been replaced. In May 1984, fifth floor windows were replaced with awning window types, requiring concrete infill at the tops of original window openings. In February 1990, the same was done to the fourth floor windows. In April 1987, the air conditioning system was repaired and extended. In April 1996, horizontal, sliding windows replaced third floor windows. As of June 1997, the total value of the building, excluding land, was assessed at \$6,287,174.04.

Several other buildings were constructed at the same time to support hospital operations and mission. A single-pump water pump house (Building 521) measuring 9 x 13 ft was completed in November 1943. The structure had concrete block walls and a reinforced concrete roof with a concrete floor supported by a concrete foundation.

In June 1965 the pumps were removed from Building 521 and it was redesignated as a paint storage building.

Other buildings constructed in association with the hospital included a dormitory for nurses, a barracks building for enlisted soldiers, NCO quarters, and officers' quarters for ranking hospital personnel. Together, these facilities and other functional buildings comprised a discrete medical complex on the grounds of Fort Clayton [5.24].

Building 518, Nurses' Quarters

In January 1942 the first Army nurses were assigned to duty in the Canal Zone. The first two units to arrive on the isthmus were the 210th General Hospital, which was assigned to Fort Gulick, and the 218th General Hospital, which was assigned to Fort Clayton. The 218th, which numbered 89 nurses, had been activated at Fort Belvoir, Virginia, on 5 June 1941. The nurses were temporarily assigned

[5.24] Fort Clayton medical complex, including nurses' dormitory, male staff barracks, and ranking officer's quarters (c. 1943).



to duty at installation dispensaries on the Pacific side of the isthmus until the Sector Hospital and nurses' quarters were completed in 1943.

The 218th General Hospital was inactivated on 1 April 1943 and its personnel reassigned to the 333rd Station Hospital at Fort Amador. On 6 September 1943 this unit transferred to Fort Clayton to staff the new hospital. On 1 April 1944 the 333rd Station Hospital was again redesignated as the 262nd General Hospital; staffing comprised 40 officers, 1 warrant officer, 63 nurses, 2 dieticians, 2 physiotherapy aides, and 353 enlisted men.

Building 518, the Fort Clayton Nurses' Quarters, was completed in July 1943, at a cost of about \$236,000. With a capacity of 40 single rooms, the building contained 27,787 sq ft of usable space. The basement of the building included garage space, three servants' bedrooms and bathrooms, a trunk room, kitchen stores room, and washroom. The ground floor included 18 bedrooms with connecting bathrooms. A single bedroom with private bathroom and living room; an office, two reception rooms, and a dining room with adjoining kitchen. The second floor of Building 518 contained 20 bedrooms with connecting bathrooms, a large communal living room, and a sewing room. All bedrooms opened onto a screened porch.

In October 1951, streetlights were installed on Hospital Road between the nurses' quarters and Building 519. In August 1968 the building was converted to a guest house, and the canopy was moved to the Fort Gulick Guest House in April 1990. The canopy was replaced with a permanent tile-covered awning supported by a colonnade of square brick columns. In June 1991 two modern bohios were built on the site. Designed to resemble the traditional thatched hut popular in Panama, these bohio structures were updated with concrete floors, metal tube columns covered with clay brick, and tile roofs.

Building 520, Enlisted Men's Barracks

In June 1942 a standard 200-man barracks (Building 520) was completed to house all male military staff working in the hospital. Like other standard barracks, Building 520 was constructed of concrete frame, concrete block walls covered with stucco, red Spanish tile roofing, and continuous mediaguas [5.25]. The original cost of the barracks was \$102,000.

The ground floor of Building 520 was enclosed in 1954 and the building was converted to a 60-man BEQ (Senior Bachelor NCO

[5.25] Enlisted men's barracks under construction near hospital (c. 1941–1942).



Quarters) in 1963. The second and third floor spaces were converted from squad rooms to cubicle rooms. In response to increased manpower demands during the late 1960s, the first floor was partially converted to cubicles in 1968. The dining facilities received an upgrade in 1972; an electrical upgrade was completed in 1974, and a mailroom was constructed a year later. The mechanical systems were upgraded in 1977, and the second and third floors were altered in 1978. A general renovation occurred in 1987 with new air conditioning units being installed on the first floor. The dining room received central air conditioning service and the windows were replaced with aluminum sash; as in many other cases a portion of the window openings had to be filled in to accommodate the smaller modern windows. By the late 1980s the first floor no longer contained sleeping accommodations and had reverted to shared-living facilities. The third floor housed both men and women. Aluminum sliding windows were installed in the remainder of the top three floors in 1992. Window air conditioning units were still being installed on the ground floor in 1994. The building later became home to replacement detachments. A bohio was constructed for the facility in 1983.

Hospital Officers' Housing

Quarters were also provided for officer-grade hospital personnel in a group to the west of Building 518. This group contained NCO (Buildings 501-515), company officer (Buildings 506-511, 515), and field officer housing (Buildings 512-514, 516-517). The buildings were all two-story tropical style structures designed along the same lines as the others built during this period. The NCO and company officers' quarters each held two families, with two and three bedrooms, respectively. The exception to this plan was Building 515, the only single family (three bedroom) company officer's quarters built on post during this period. It measured 26 x 35.5 ft. The field officers' quarters were all single-family, four-bedroom units.

Nearly all of this officers' housing had aluminum horizontal sliding and/or awning windows installed in the early 1970s. The quarters had their interior and exterior doors replaced in 1979, and central air conditioning was installed in 1987 - 1988. Buildings 501-511 had their windows replaced with double-hung aluminum sash windows in 1990.

Other Hospital-Related Construction

Completed in July 1943, a garage for 12 cars was constructed using the same building materials as the hospital—concrete and clay roofing tile.

Building 519-A was modified in 1952, involving chiefly a change in roofing material. The building was renumbered Building 525. In June 1969 an earth and rock heliport, designated Facility 522, was constructed on the hospital grounds near the emergency room entrance. Facility 522 was subsequently paved with asphalt and used as a parking lot when Building 519 became the administrative center for USARSO.

A Brief History of Operation Transit

The Panama Canal stayed open and operational during World War II, and transit by U.S. ships was routine and uneventful. As a ship made its way from one ocean to the other the troops aboard were often allowed to disembark for rest and relaxation. In April 1944 the Assistant Chief of Staff to the Caribbean Defense Command was authorized to offer these soldiers quarters, transportation, and rations. Individual post commanders offered access to the local PX, medical care, and entertainment. Following the defeat and surrender of Germany on 10 May 1945 more than 125,000 troops were transported through the Panama Canal from Europe to the Pacific Theater; to handle this traffic the command formally established *Operation Transit* on 5 July 1945.

Under *Operation Transit* there were four basic scenarios for servicing ships and accommodating troops. Plan A was for ships that were docked for a short period of time at either Pier 18 in Balboa or Piers 6 or 9 in Cristobal. In these cases there was not enough time for troops to leave their ship, and little time for their hosts to do more than put magazines and recreational equipment aboard, and to deliver films for later viewing by the troops. If time allowed, a military band would set up on the pier and entertain the troops.

Plan B was for troops who stayed aboard their vessel to eat and sleep, but were able to debark to the pier area for a few hours of recreation. Plan C was established for similar situations but included provisions to shuttle troops to a prearranged recreation area, such as the Balboa High School stadium, for exercise. Under Plan B mobile PX facilities were parked at the pier, and soldiers were able to buy candy, soft drinks, ice cream, toiletries, and souvenirs; they could also participate in recreational activities at the pier. Under Plan C soldiers were able to get in a game of baseball during their limited shore leave.

Plan D was the most expansive scenario, and involved billeting visiting troops on post. On the Pacific side of the isthmus, the closest installation to the Balboa pier was Albrook Field, and it was there that troops were routinely taken for billeting. As a vessel entered the first set of locks at Gatun on the Atlantic side, a representative of the Caribbean Defense Command boarded the ship for the duration of the transit to Balboa. After briefing the Commanding Officer of Troops the agent went on to brief and organize the troops and to make on-ship arrangements. He then disembarked at Pedro Miguel and was driven to meet the transport at Balboa. As soon as the gangplanks were in place the soldiers came ashore, formed into their preassigned

groups, and transported to their destination. The logistics were very efficient, and thousands of troops could be processed in a short time.⁴⁶

A transit of the vessel *USS General D. E. Aultman* turned out to be unique for its passengers, but at the same time was virtually routine for the managers of *Operation Transit*. On its way home from the Pacific Theater with its tired troops, the *Aultman* entered Cristobal Harbor at about 1350 hours on 7 August 1945 and began its transit through the canal. The transit went well until about a mile south of the Miraflores Locks, where the ship ran aground. While repairs were made to the 'marooned' ship the lucky troops aboard prepared to disembark and spend a few days as guests of the command. Because two other vessels were due to arrive with troops who were already 'booked' into Albrook Field and at Fort Amador, the soldiers from the *Aultman* were transported to two other Pacific-side installations: Fort Kobbe hosted 1782 officers and enlisted men while Fort Clayton provided hospitality to the remaining 84 nurses, 5 Red Cross women, and 1427 officers and enlisted men.⁴⁷

At 1105 hours on 8 August the troops arrived at Fort Clayton and were taken to the canteen service, where the Red Cross was set up to serve 1500 doughnuts and 150 gallons of punch. They were also able to take advantage of reading material, private desks for writing letters home, and health consultations provided by the Red Cross. At the Fort Clayton PX the visitors spent nearly \$7000 on 432 bottles of Coca Cola, 180 gallons of bulk ice cream, and 35 kegs of beer. In order to ensure that plenty of merchandise was available for troops making the transit, the Commanding General had allotted \$10,000 to the Department Exchange Officer. The most popular items sold at the PX were candy and soft drinks. Many of the soldiers purchased souvenirs and gifts, which were wrapped and mailed free of charge.

During their first day at Fort Clayton the visiting troops were given access to post athletic facilities, and in the evening about 800-900 persons attended a USO show at Theater #2. After the show a basketball game was organized at the post gymnasium. The responsibility of arranging USO shows, orientation courses, and radio programs fell to the PCD Special Service Office. This office also coordinated with the Red Cross and other volunteer organizations to organize athletic and recreational activities, and even to provide dance partners for the troops [5.26].

Red Cross services were open early the next day and the PX continued its land-office business selling 15 cases of Coca Cola, 10 cases of other soft drinks, 18 cases of Panamanian beer, and 60 cases of U.S. beer between 0900 and 2300 hours. During the early hours of 10 August passes were

"We have been enjoying an unscheduled but most welcome shore leave all this week in what to us is paradise. Beautiful posts that make the finest country clubs at home look cheap, have been our hosts and they have wined and dined, and waited on us hand and foot."

Unidentified soldier involved in Operation Transit⁴⁸

[5.26] Special Services personnel perform many duties in Athletic, Recreational and Welfare Activities which include the operation of public address systems in parades, ceremonies, and athletic events.



issued, after which the soldiers participated in a march. Those who received passes—some five busloads—took a sightseeing tour of some of the country's historic sites. That evening a dance was held at the gymnasium with Red Cross volunteers attending as dance partners. The highlight of the following day was a baseball game between a Fort Clayton team and a "crack Negro outfit" from the *Aultman*.⁴⁹ The final score was Visitors 4, Fort Clayton 2. The troops, on their way home from battle in the Pacific, returned to their vessel, and at 1130 hours on 13 August the *USS General D. E. Aultman* put out to sea.

The PCD Surgeon's Office played an important role in *Operation Transit*. It was the responsibility of this office to remove injured or ill patients from the troop ships for care at the Fort Gulick (on the Atlantic side) or Fort Clayton hospitals. When surgery or extended treatment was required the injured personnel would sometimes remain at the post hospital after their ship left the Canal Zone. During *Operation Transit* several hundred patients were admitted to the Fort Clayton and Gulick hospitals.

On 12 September 1945 Lieutenant General George H. Brett, Commanding General, officially ended *Operation Transit*. During the operation, which lasted only a few months, ships took on 410,000 barrels of fuel oil and, thanks to the Red Cross, 124,725 complimentary pints of ice cream. Soldiers received 335,000 lb of mail and used 150,000 pieces of stationary to send greetings back home from the Panama Canal. *Operation Transit* clearly did the job making the experience pleasant for the troops just as canal defense forces made the transit secure for the ships. As one soldier effused, while passing through during *Operation Transit*: "[T]he whole setup from General down to private fell over themselves to entertain and make us comfortable."⁵⁰

"The men [at Albrook Field] had settled into their quarters and were drifting back to the recreation area. Somewhere a newscaster was intoning the same reports heard for days. Swiss, Japanese, and American officials were hurrying about; messages were being decoded, encoded; there was nothing definite yet—suddenly a pause—the announcer's voice, atremble with excitement, broke and then blurted out, 'Japan has surrendered!' Air raid sirens, whistles from ships in the harbor, from trains and repair yards, horns from passing automobiles, raised an almost solid wall of ecstatic sound."

S.D. Berardinelli:⁵¹

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CHAPTER 6

The Cold War Era and New Missions (1946–1978)

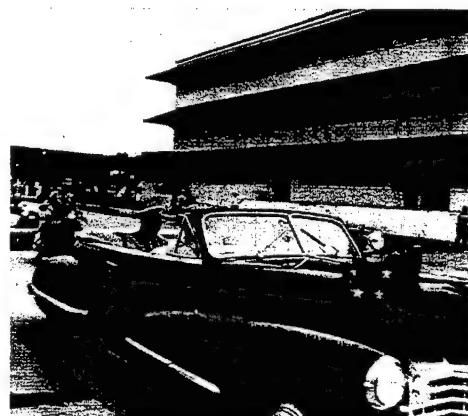
The Changing Face of the Postwar World

The end of World War II brought about a new geopolitical reality into which military-industrial superpowers emerged with weapons powerful enough to strike every corner of the globe. For U.S. military forces this meant constant improvements in weapons, training, and readiness [6.01]. Alliances spanning oceans and hemispheres created a precarious and subtly shifting balance of power as east and west sought dominance both militarily and politically. Defense strategy became increasingly hemispheric in character, and the nations of Central and South America were actively courted to play supporting roles in the global U.S. defense strategy [6.02].

The everyday aspects of life after the war were changing dramatically, too. Postwar prosperity spurred the advance and commercialization of formerly exotic technologies that would become standard equipment in the lives of America's middle class. The demand for modern household comforts and conveniences was sharply on the rise beginning in the late 1940s—for civilians and soldiers alike. Three consumer technologies that made their mark on Canal Zone infrastructure (as they did back home) were air conditioning, television, and the proliferation of automobiles. Post-war construction programs on Army installations, including Fort Clayton, put a growing emphasis on modern, quality housing because of the need to recruit and retain motivated career soldiers. A growing number of soldiers were getting married and starting families on military installations, and the efforts to accommodate family life on base had a substantial impact on the development of Fort Clayton after World War II.



[6.01] A member of the 242nd Chemical Supply Detachment demonstrates an M-1 smoke pot to personnel participating in *Operation Jackpot II* at Fort Clayton, August 1953.



[6.02] General of the Army Dwight D. Eisenhower motorcades through Fort Clayton during his 1946 visit to the Canal Zone.

Continued Postwar Drawdown

The reduction in strength and redeployment of troops from the Panama Canal Department and the Caribbean Defense Command that began in spring 1943 increased in pace until prewar strength was reached in December 1945. The first month of 1946 brought the beginnings of troop reorganization, the goal of which was to reach a 1 March target of 20,000 Canal Zone troops.¹ The speed with which troops were transferred out of the Canal Zone left quite a bit of confusion as to actual numbers. This census problem was not confined to Panama, however, and was widespread throughout the entire military.

Personnel counts continued to decline for about 15 years after World War II. Total military census in Panama reached its lowest ebb in 1959, at 6600 troops. This number gradually increased to about 10,000 by the mid-1970s and would remain fairly constant into the 1990s, when the final major troop reductions began in preparation for a total U.S. military withdrawal from Panama by no later than 31 December 1999.³

Command Reorganizations Through the Cold War

Consolidation Under USARCARIB

As part of the postwar drawdown process, the Coast Artillery Command and the Mobile Force were discontinued, and on 1 December 1946 the Panama Canal Department was again divided into Atlantic and Pacific sectors. By this time the Sixth Air Force had been relieved from the PCD and established as the Caribbean Air Command. More sweeping changes occurred in 1947 when the Air Force became a separate branch of the armed forces under the Department of Defense. Also that year, the Army, Navy, and Air Force components in Panama were reorganized under the Caribbean Command. As part of this reorganization, on 15 November 1947 the Panama Canal Department was inactivated and replaced with the U.S. Army Caribbean (USARCARIB). Headquarters for USARCARIB were relocated from Quarry Heights to Fort Amador 2 years later. The decision to retain a unified command over Canal Zone forces reflected the continuing need for an integrated defense that could effectively utilize all available defensive measures in any emergency. In the years immediately following the war the United States made efforts to keep defense sites in Panama that had been established outside of the Canal Zone. Negotiations toward this end proved fruitless, however, and on 22 December 1947 the Panamanian National Assembly voted down a proposed defense base treaty.⁴

Defense of the Panama Canal remained a primary mission for USARCARIB, but it was joined by a new priority implementing the policies and international agreements pertaining to military assistance groups in Latin America. Additional requirements included the operation of a school to train selected Latin American Army officers and enlisted men and support of the U.S. Army Inter-American Geodetic Survey.⁵

The idea of the school for Latin American military officers developed during World War II and matured in the years that followed. Officers and enlisted men of various Latin American nationalities came to Panama for field training with U.S. field units

"The Army was fast demobilizing and with the departing hordes of soldiers went most of the clerical talent. The Army was [in such chaos], administratively, and the demobilization going so fast that it became necessary to have an army-wide 100 percent muster. On a given day in 1946, every person in uniform was in formation and answered to his name being called, and records of the muster were forwarded to the Adjutant General in the Pentagon, Washington, DC, to get the strength of the Army straightened out."

Martin A. Peters²

stationed at Fort Clayton. This initiative would eventually become the mission of the U.S. Army School of the Americas at Fort Gulick.⁶

The Army's Southern Command

A 1963 reorganization redesignated the Caribbean Command as the United States Southern Command (USSOUTHCOM), and this became the forces-wide command for the area. USARCARIB became the United States Army Forces Southern Command (USARSOUTHCOM, later shortened to USARSO). These actions changed organizations, but the overall missions and responsibilities remained the same. The Army command structure changed again in 1974, possibly due to the end of the Vietnam conflict and the subsequent reduction in Canal Zone jungle training. In any case, USARSOUTHCOM was relieved as a major Army command and assigned to Fort McPherson, Georgia, as a subordinate command of the United States Army Forces Command (FORSCOM) on 1 July 1974. The Army component of SOUTHCOM was assumed by the 193rd Infantry Brigade on 31 October 1974, which was redesignated the 193rd Infantry Brigade (Canal Zone) under command of the United States Army Forces Command.

The unified command, USSOUTHCOM, provided operational control for the 193rd Infantry, which was headquartered at Fort Amador. This brigade had been activated in 1962, at that time comprising the 4th Battalion (Mechanized), 20th Infantry; 3rd Battalion, 508th Infantry (Airborne) at Kobbe; and 4th Battalion, 10th Infantry. This configuration enabled the brigade to defend the canal by land, sea, and air. These elements were later joined by the 1st Battalion, 187th Infantry, and 5th Battalion, 87th Infantry. Around this time the secondary missions of Central and South American military support—disaster relief and drug interdiction—began to gather steam. These missions came into their own during the 1980s in an era of regional ideological ferment and the rise of new military strongmen.⁷

Fort Clayton's Evolving Mission

As always, the ground forces remained tasked with the close-in defense of the Panama Canal. The 33rd Infantry was reactivated at Fort Clayton on 1 February 1946 and headquartered in Building 129, which had been vacated when the 11th Engineer Regiment returned to the United States in 1943. On 1 August 1948 the 33rd Infantry moved to Fort Gulick, where it was inactivated one month later. The unit would later be reactivated (4 January 1950) at Fort Kobbe, and it remained there until 26 May 1956.⁸

The assignment and attachment of units to Fort Clayton was reorganized in 1956 under General Orders 15, Headquarters, U.S. Army Caribbean. The primary units assigned to Fort Clayton were Headquarters and Headquarters Detachment, 65th Anti-Aircraft Artillery (AAA) Group, 534th Military Police Company, and the 79th Army Band. Also located at Fort Clayton or Corozal were the Inter-American Geodetic Survey, Civilian Personnel Office, Medical, Signal, Ordnance, Chemical, Finance, Engineer, Transportation, Quartermaster, 518th Engineer Company (Combat), and the 17th Ordnance Company (Direct Support). The 65th AAA Group Commanding Officer also held this rank for Fort Clayton and the sub-posts of Corozal

and Curundu. Most troops of the AAA Group were dispersed to anti-aircraft artillery positions in the surrounding terrain. The 518th Engineer Company (Combat) was the only other combat unit stationed at Fort Clayton. It provided troop support to engineering projects across the isthmus. The remaining units provided administrative and technical services for USARCARIB operations. With some minor rearrangement, this assignment of units to Fort Clayton remained in effect until the implementation of the Panama Canal Treaties in 1979.⁹

Curundu Realignments

The massive amount of construction at Fort Clayton associated with World War II greatly contributed to the total construction investment in the post, which was estimated at more than \$14.6 million from the beginning through 30 June 1946. After World War II, as previously discussed, massive military demobilization and funding cuts essentially ended new construction projects at Fort Clayton in the immediate postwar years. In 1950, and again in 1956, the boundaries of the Curundu Military Reservation were readjusted, with five parcels allocated to Albrook Air Force Base. The remaining property was designated as Fort Clayton and included the Post of Corozal and the Curundu Housing Area.

The Curundu Housing Area provided housing for Department of the Army civilian employees and military personnel. The “low-cost” housing area had been constructed as part of the World War II buildup, and had its own amenities such as a clubhouse and post office.

Corozal, originally turned over to the Army by the Isthmian Canal Commission in 1911, was one of the earliest U.S. military posts in Panama. The installation primarily served the Army as a supply depot and maintenance center. Corozal's later activities included elements of the 193rd Infantry Brigade (Panama) such as the Directorate of Facilities Engineering and the G4 Directorate of Logistics. Tenant units of the 193rd Infantry stationed at Corozal included the U.S. Army Communications Command Agency-Panama, the U.S. Army Tropic Test Center, and Troop Support Agency.¹⁰

Impact of Cold War-Era Military Conflicts

The Korea Action

With the June 1950 North Korean invasion of South Korea, the United States entered its next military conflict. The Canal Zone did not escape the impact of this involvement; the canal was instrumental in shipping troops and materiel to the fronts. By order of the Commanding General, USARCARIB was placed on modified alert status on 28 June 1950. Security at military installations was increased and Army guards were assigned to critical canal facilities. Defensive measures were soon upgraded as anti-aircraft units took up tactical positions to defend against air attack and to assist in harbor defense. Anti-aircraft positions protecting the locks were the same ones used during WWII. Control of ships in and out of the Canal Zone tightened, hostile foreign nationals were arrested and detained, and anti-sabotage measures

were put into place to support the USARCARIB defense mission. Military lock guards were reinstated, but these were greatly reduced in 1952 when the Panama Canal Company's own Locks Security Force was activated. Consequently the Army's mission in this area was revised from "internal surveillance" to "perimeter surveillance" of the locks.¹¹

Mobile reserves were mustered at Forts Gulick and Clayton. At Fort Clayton this reserve consisted of 4 officers and 103 enlisted men from B Troop, 45th Mechanized Cavalry. The duration of tours of duty was extended for all military personnel. After the Army tasked USARCARIB with maintaining a jungle training program in 1951, a permanent home for this training was located on the Atlantic side at Fort Sherman. Program graduates were relocated to Korea. Civilians in the Canal Zone took Civil Defense classes such as first aid in preparation for a possible attack.

With its defenses in place and ready, as during World War II, the Canal Zone ultimately was not directly involved in military conflict during the Korea action. After the conflict, a reorganization and strength realignment occurred.¹²

Vietnam Conflict

The Vietnam conflict did not have a large impact on Canal Zone military installations, with the exception of Forts Sherman and Gulick, where training for jungle operations was provided. Training facilities at Fort Sherman included mockups of Vietnamese villages.

The Panama Canal did not serve as a major transshipment point for troops or supplies during the Vietnam conflict, and no alerts were issued in the Canal Zone during this time. Fort Clayton remained the major Canal Zone Mechanized Infantry post, but had no direct participation in the conflict.¹³

One notable change in defense tactics was initiated during the Vietnam era: in 1960 Hawk missile batteries were put in place to supplement the anti-aircraft automatic weapons at the Atlantic and Pacific entrances to the canal. The Hawk was a medium-range anti-aircraft missile that provided air defense coverage against low-to-medium altitude aircraft. The Hawk system was mobile, mounted either on a towed trailer or a tracked vehicle. The mobile nature of the system provided a distinct advantage in potentially "hot" areas. Two Hawk battalions were deployed to Florida in 1962 during the Cuban missile crisis, and during the mid-1960s Hawk units were deployed to Vietnam to protect air bases and port facilities. The Hawk batteries installed at each end of the Panama Canal were removed at the end of 1968.¹⁴

The Panamanian Sovereignty Movement

Rising Postwar Nationalism

During the 20 years following World War II a tide of nationalism rose in Panama and the pro-sovereignty opinion grew more and more inflamed. Many Panamanians held a long-standing resentment of U.S. control of the Canal Zone. Panamanians

saw the canal as an economic bonanza from which most of the profits went to the United States. Panamanian merchants resented the U.S. control of the Canal Zone economy, which denied them sufficient access to the lucrative market there. Furthermore, disparities in pay rates between Panamanian and American workers in the Canal Zone was considered inherently unfair. Resentment was further inflamed by requirements that Panamanians leave the Canal Zone at night, which in the Panamanian view barred them from free access to a part of their own country. These issues had a combined impact that made many Panamanians feel that their destiny as a people was not in their own hands. Although some of these issues were addressed over time through negotiations, tensions reached a boiling point in the late 1950s and early 1960s. The Panamanian and American flags became a highly visible symbol of this tension, which culminated in the "flag riots" of 1964.

The Flag Riots

Panamanians began to press for display of their national flag in the Canal Zone. Several flag-related incidents occurred in 1959, and the Panamanian government formally requested the right to fly its flag in the Canal Zone [6.03]. On 17 September 1960 President Dwight D. Eisenhower agreed to this request and ordered that one dual-flag site be established in the Canal Zone at the area known as Shaler's Triangle. The concession did little to quell nationalist sentiments, however, and Panamanians continued to press for renegotiation of the 1903 Treaty. More rioting occurred in 1962. Following negotiations with Panamanian authorities, President John F. Kennedy signed an executive order in January 1963 directing that whenever the American flag was officially displayed in the Canal Zone, a Panamanian flag would accompany it. After an attempted injunction to prevent enforcement of this order was denied, implementation of the dual-flag policy was scheduled for 2 January 1964. In an effort to tone down the effect of this policy, Canal Zone Governor Robert Fleming ordered the elimination of official flag sites at several locations, including the Canal Zone high schools. Unaware of this decision, students returning from Christmas break were surprised and dismayed to find a bare flagpole in front of Balboa High.¹⁶

Three days of quietly increasing tension broke on the morning of 7 January 1964 when a group of students, with an audience of hundreds, raised the American flag in front of the school. To protect this flag from removal, the students ringed the flagpole and began a vigil that lasted for 2 days. For the students, "the general sympathy the protestors enjoyed at the high school was not based on their opposition to dual flags but on their opposition to the removal of the American flag."¹⁷ For Panamanians, however, this act seems to have represented an adamant refusal by the Canal Zone government to acknowledge Panama's titular sovereignty over the Canal Zone. Consequently, on the afternoon of 9 January 1964 about 200 students from the Instituto Nacional—Panama's premier public high school—marched into the Canal Zone with a historic Panamanian flag, intent on raising it on the

"The riots were a total surprise; in retrospect, the situation was a social time bomb. Tensions were already high . . . Panamanians felt harassed, without sovereignty. The two sides did not have sufficient mutual respect. There was never any groundwork laid for cooperation, especially not at lower social levels."

Stanley Leon¹⁵

[6.03] Protestors attempting to enter the Canal Zone with flags and signs are confronted by the Panamanian National Guard, 26 November 1959.



Balboa High School flagpole. In the highly charged atmosphere the gathering became disorderly, and according to some accounts the historic flag was torn in the confusion. The students retreated back across the border into Panama.¹⁸

As word of this incident spread, as many as 3000 Panamanians gathered in crowds on the Canal Zone border and began rioting. Cars were overturned and burned, fire-bombs were thrown, small arms fire erupted, and buildings were set on fire. The U.S. Army was finally called in to protect the Canal Zone from further incursions.

The Flag Riots continued for 3 days, ending only when the Panamanian National Guard was sent in to restore order. Hundreds of people were injured during these disturbances; according to conflicting reports, 20 to 25 Panamanians and 4 U.S. military personnel were killed. Property losses exceeded \$2 million.

On 18 December 1964, President Lyndon B. Johnson agreed to negotiate a new canal treaty with the Republic of Panama.¹⁹

The Panama Canal Treaties of 1977

After 10 years of preliminaries and talks, in 1974 U.S. chief negotiator Ellsworth Bunker agreed in principle to return jurisdiction over the Panama Canal and the Canal Zone to the Republic of Panama. During the administrations of U.S. President Jimmy Carter and General Omar Torrijos, the military ruler of Panama, the details of two treaties were finalized [6.04].

The first document, called the "Panama Canal Treaty," abolished the Canal Zone and returned the territory to the Republic of Panama; the United States retained the authority to operate and defend the canal until 31 December 1999. The second document, entitled "Treaty Concerning the Permanent Neutrality and Operation of the Panama Canal," granted the United States the permanent right to defend the neutrality



[6.04] President Jimmy Carter and First Lady Rosalynn Carter wave to a cheering crowd at Fort Clayton, 17 June 1978.

of the Panama Canal even if the number of U.S. troops and bases were reduced. The treaties were signed on 7 September 1977. After months of heated debate, the U.S. Senate ratified the two treaties in March and April 1978, each by a vote of 68 to 32. It was the beginning of the end of an era for U.S. military and political influence in Panama.²⁰

Fort Clayton Becomes a Community

From ‘Housing’ to ‘Home’

After World War II the military services sought to retain officers and enlisted personnel on a career basis. As weapons and defenses grew in complexity the Army had to increase the time and resources dedicated to training. The value of experience rose: the longer the Army could keep a well trained soldier in uniform, the better an investment he was in the national defense.

But after the hardships of war many soldiers had the same impulses to “settle down” as anyone else. The large peacetime Army was increasingly populated by soldiers who got married and started raising a family. In 1954, 35 percent of military personnel were married; by 1961 the figure had risen to 45 percent, and by 1977 it was 60 percent. Not surprisingly, the postwar baby boom left a heavy fallout on military installations. Barracks were no place to raise a family: it quickly became clear to military leaders that good-quality permanent family housing was essential if the services were to recruit and retain qualified personnel. While the military buildups associated with the Korea and Vietnam conflicts provided periodic impetus for housing construction programs at Fort Clayton, the necessity of retaining quality personnel was probably overall the most important single driver of housing construction at Fort Clayton since the 1950s.²¹ The Army not only had to provide soldiers with *housing*, it had to provide them with *homes*.

Community-Oriented Planning

In 1955 the Department of Defense issued criteria for family housing that addressed planning and design elements for new construction.²² It was recommended that the planning focus be shifted from individual quarters more to the community level; amenities such as privacy, family safety, and integration of the natural environment were watchwords. Over the next 25 years these criteria would leave their unmistakable imprint on the built environment at Fort Clayton. As these amenities were put into place in new housing areas the results resembled suburbia in atmosphere much more than a regimented military base. Streets were more curvilinear, following the natural rise and fall of the topography, and most terminated in dead ends. Housing units were clustered off the main roads, and were often arranged in small groups around short *cul-de-sacs*. These small groupings improved privacy for residents and provided safe play areas for children, away from heavy traffic. For beautification purposes family housing construction projects at Fort Clayton included landscaping plans. These designs specified ornamental shrubs, palms, and various other small and large trees to provide decoration, extra shade, and to enhance residential privacy.

The new housing areas of this era were located east of the main post, mostly spread out on the far side of the Cardenas River in the undeveloped area of hills and plateaus northwest of the hospital. One group of housing was approached through the hospital quarters area. The other main group required the addition of a new access road off of Morse Avenue. Even farther to the east were two small groups of housing, situated south of the hospital. Both of these, built in a previously undeveloped area, were accessed from Clayton-Albrook Road. The expansion of family housing across the river made it necessary to build a bridge over the Rio Guanabano tributary, a stream flowing into the Cardenas. A channel improvement project in 1972 widened the tributary enough to require replacement of the first Rio Guanabano bridge.

Power Upgrades

As the Army provided a higher quality of life through housing improvements on post, basic services were upgraded to support these improvements. Several important upgrades were completed during this period. The electrical distribution system was upgraded several times, starting with rehabilitation of the primary and secondary distribution systems in 1950.

Perhaps the single most important upgrade was begun in the late 1950s when Fort Clayton and the rest of the Canal Zone upgraded to modern 60-cycle electrical service. This change had a huge impact on the Fort Clayton lifestyle. First, it made household electrical service compatible with window-mounted air conditioners being mass-produced in the United States. Although this technology had been on the market for years, it was unusable in the Canal Zone because it was incompatible with Panama's antiquated 25-cycle current. Second, because the United States had long since standardized on 60-cycle electric service, all modern U.S.-made household appliances were configured for 60-cycle power. As the upgrade progressed across the installation, off-duty life on Fort Clayton increasingly resembled that of suburbia. After dark these tidy middle-class neighborhoods, like their counterparts in the states, would be bathed in the soft blue flicker of television screens. Indoors, at least, the buzzing of mosquitoes was vanquished by the whirring of air-conditioner compressors.

It took years to complete the conversion of Fort Clayton to modern electric service. The oldest parts of the installation were upgraded first, with work continuing through the 1960s. As technology progressed, upgrades continued. New transformers, substation, and switching station were erected in 1970, and primary cables were replaced in the early 1970s. Streetlights were installed in new housing areas and replaced in a few older ones in 1973–1974.

Housing Design Drivers—Economy, Technology, and Lifestyle

Fundamental changes in housing design were also showing up during this period. These changes were driven mostly by the competing needs of improving housing design and curbing rising construction costs.

One basic change was enabled by the advent of 60-cycle power and window-mounted air conditioning units: because it was no longer necessary to raise houses above-ground on columns to catch cooling breezes, one- and two-story houses could now be built on concrete slabs. This significantly reduced construction costs, and even more money was saved by making wider use of Army-standard construction plans.

The inclusion of laundry facilities in the housing units eliminated the need to provide protected spaces under the first floor for drying clothes. Most new construction used awning windows instead of jalousies in order to better accommodate the window-mounted air conditioners. It became standard practice to install guttering on new buildings, and glazed windows were made both practical and necessary by air conditioning. These advances in turn eliminated the need for those familiar staples of tropical architecture—deeply overhanging roofs and mediaguas.

Cost containment and technology improvements did not completely eliminate tropical character from Canal Zone architecture. The use of masonry block construction and stucco continued, as did the taste for red roofing materials. In general, however, the postwar housing constructed at Fort Clayton bore less resemblance to earlier housing on the post than it did to housing on military installations thousands of miles away across the United States.²³

Some Crowning Touches

The Canal Zone school system was run by the Panama Canal Company/Canal Zone Government. There were schools located in various Canal Zone towns and on military installations, but for almost 20 years after the end of World War II Fort Clayton had no elementary school of its own.²⁴ Military families had no choice except to have their young children spend hours a day on buses (also provided by the Canal Zone Government) to get to schools on the west side of the canal. In the 1962–1963 school year, Fort Clayton's need for a 'hometown' elementary school was partially met when Building 129 (formerly the 11th Engineer regimental HQ barracks) was converted to use for that purpose.²⁵ Then finally, in 1967, the children of Fort Clayton had their own neighborhood school with the completion of Curundu Elementary School.

As noted previously, the upgrading of electric service and increasing availability of modern U.S. appliances spurred the rapid introduction of television to the Canal Zone in the 1950s. To meet the dawning of this new media age, the SCN radio station located on Fort Clayton was outfitted to become Panama's first television station (and was later the first to offer color broadcasts). By 1956, instructions for building an external antenna were published in the post newspaper in order to help Fort Clayton families 'out there in TV land' improve reception over what the 'rabbit ears' could pull in. Plans for outside mast antennas attached to new housing, first introduced in 1961, were included in major housing construction projects throughout the 1960s and 1970s at Fort Clayton.²⁶

Meanwhile, Back at the Movies . . .

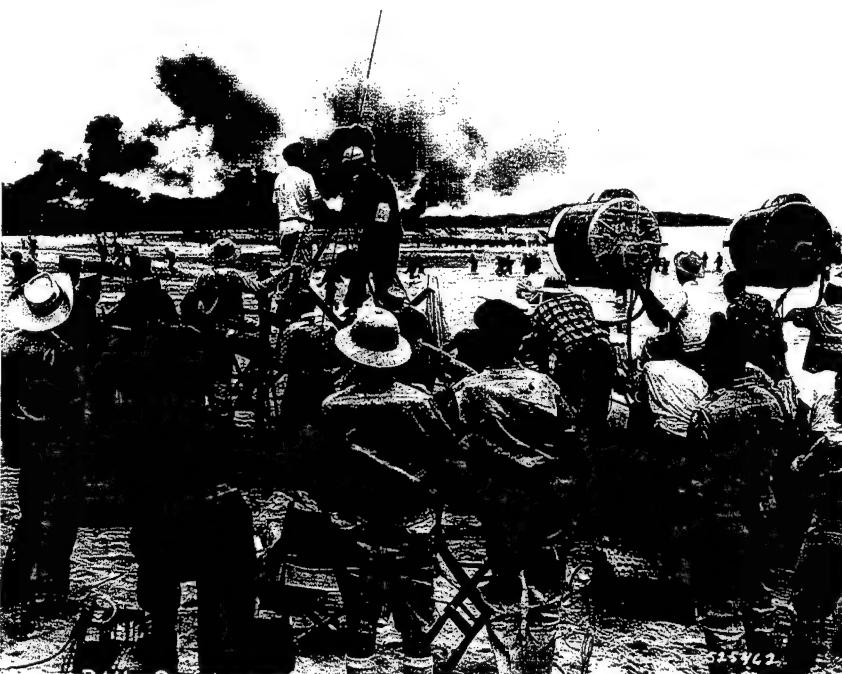
Even with the hypnotic lure of television in every living room, movies continued to play a large part in off-duty recreation activity. One of the movies that was no doubt showing in at least one of Fort Clayton's two theaters in 1958 was *The Naked and the Dead*, filmed on location in a certain Isthmian Paradise. Based on the novel by Norman Mailer, the film told a World War II story set on a Pacific island. Cliff Robertson starred as a young Lieutenant Hearn, and Aldo Ray portrayed the veteran Sergeant Croft [6.05]. The movie, which co-starred Joey Bishop and Raymond Massey, featured the ruggedly handsome soldiers of the U.S. Army as on-screen extras [6.06].

Panama's Hollywood heritage dated back to the earliest days of the canal, starting with a 1916 silent movie, *The Ne'er Do Well*. A few years later saw the filming of *The American Fleet at Panama*, a silent 1921 documentary on the activities of the Department of Navy forces in the Canal Zone.

Another movie shot in Panama at the dawn of the TV age was the 1958 version of *The Old Man and the Sea*, starring Spencer Tracy. And even though the stars may never again shine as brightly over the Panama Canal as they did during the Golden Age of Hollywood, one must nevertheless *not* give in to the temptation to forget all about *Sniper*, a postmodern nail-biter starring Tom Berenger, Billy Zane, and J.T. Walsh—filmed on location in Sunny Panama.



[6.05] Actor Cliff Robertson and Major General Thomas L. Harrold, Commanding General, USARCARIB, on the set of "The Naked and the Dead," filmed in Panama.



[6.06] Soldiers watch fellow Canal Zone GIs help to stage the invasion scene for the RKO film "The Naked and the Dead." USARCARIB troops and equipment provided an essential element of authenticity to the production.

Cold War Era Construction Projects

Residential Facilities

Modification and Reutilization of War-Era Housing

As the postwar troop drawdown proceeded and Fort Clayton found itself with excess housing space, many barracks buildings were diverted to other uses. Most commonly, they were converted for use as administrative facilities, with the floors subdivided into partitioned offices. Sometimes the entire structure was diverted to a more specialized function. Buildings 127 and 130, for example, became the Defense Mapping Agency Inter-American Geodetic Survey Cartographic School. Buildings 154 and 155 became primarily Staff Judge Advocate offices and courtroom, and a youth center. Building 156 was converted to the Fort Clayton School Annex in 1962, and then became a childcare center and the post religious education facility. Building 210 became home to the Kuna Indians who worked on post. Except for the World War II period, Kuna were employed in various service jobs on Canal Zone Army and Air Force posts since World War I until the transfer in 1999 [6.07, 6.08].²⁷ They shared the barracks with an enlisted men's club on the first floor. At one point, Building 218 housed the Military Amateur Radio System (MARS) [6.09].²⁸

Barracks that continued to function as single enlisted personnel housing did not escape changes, as most lost their kitchens and mess halls to administrative uses. This was the case for Buildings 126, 131, 202–204, 207–208, 211, 213–215, and 217. Central dining facilities were upgraded in Buildings 132, 201, 218, and 520. The dining facilities in Buildings 132 and 218 were closed in the 1990s. Some modifications had to be made for the specific troops being housed. In 1974, Building 126 became housing for female soldiers. At various times, Buildings 131 and 132 have housed men and women together (separate floors) [6.10, 6.11]. Building 207 was upgraded to house Special Forces in 1996 and Building 219 became NCO bachelor quarters in 1963.

Physical changes were often necessitated by these function changes for the barracks. Certain uses required remodeling to eliminate windows and provide more security measures. Other uses required more space, so ground floors were often enclosed with stuccoed concrete blocks and utilized.



[6.07] Two Kuna men from the San Blas Islands.



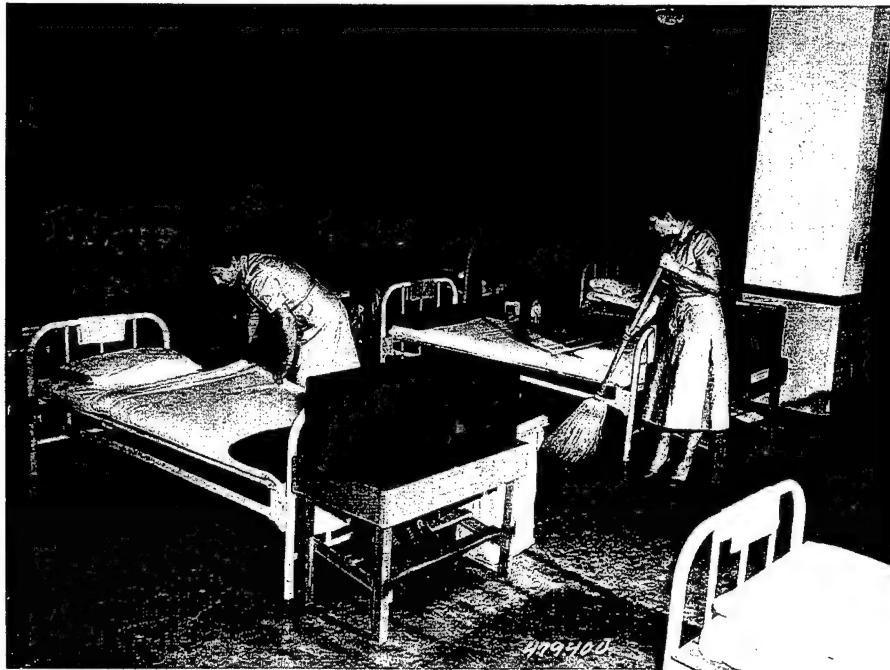
[6.08] Kuna women on Fort Clayton.



[6.09] Military Amateur Radio Station card of the 2nd Field Artillery. Ham radio operators would note the date, time, group, and location of a contact and exchange cards with one another.



[6.10] Soldiers of the 7448th Women's Army Corp (WAC) Detachment, Fort Clayton, relax in their day room.



[6.11] Two members of the 7448th WAC Detachment clean their quarters.

Changes within the Army as a whole, and the Canal Zone in particular, also created alterations needs. When the draft ended in 1973, the Army sought ways to make enlistment attractive to potential volunteer recruits. One method used for this was to modernize the living arrangements for troop housing. These modifications were carried out locally at Forts Clayton, Gulick, Kobbe, Sherman, Davis, and Amador. Large squad rooms were considered unappealing, so they were subdivided with partitions into smaller units housing three or four people. The utilities were upgraded, and the buildings received a general "sprucing up."

This mid-1970s program did not cover all barracks, and another round of modifications, "Phase I and II Alterations

to Facilities," was undertaken in the late 1970s as a result of the Panama Canal Treaties. When the treaties were implemented in 1979, many Army activities were consolidated at Fort Clayton. Again, certain functions required specific modifications, and the Phase I and II project extended beyond barracks to include upgrades to Building 95. For most barracks, the partitioned bays were converted to two-man rooms.²⁹

Modernization efforts continued throughout the 1980s. The major visual exterior modifications were related to the shrinking size of window openings. Due to the availability of air conditioning and rising maintenance costs, many tropical-style exteriors started as large screened openings set on low concrete block walls; ultimately screens were replaced with aluminum jalousie windows, then awning windows, and finally to single- or double-hung aluminum frame sash windows. As these changes were made over time the square area of exterior openings became progressively smaller—infilled with concrete block to accommodate the smaller window hardware. By the end of this progression the size and number of open exterior wall openings had markedly declined. Another visual exterior modification was made in 1987 when the Spanish tile cladding on the mediaguas of all of the 200 area barracks were replaced with red fiberglass shingles [6.12].



[6.12] Line of 100-man barracks at Fort Clayton showing enclosure of ground floor, reduced window openings, and shingle cladding materials on mediaguas.

Early Postwar Officers' Quarters

Two officers' quarters construction projects were undertaken in the latter half of the 1940s: a set of NCO duplexes and a 24-apartment BOQ. These projects would be the last new housing construction on Fort Clayton for a decade.

Bachelor Officers' Quarters. The BOQ (Building 400) was similar to one constructed at Albrook Field. Based on 1947 Corps of Engineers plans, the building was completed in 1948 at a cost of about \$204,000. The rectangular, three-story building measured 240 × 36.5 ft and was sited at the intersection of Muir and Morse Avenues, across Muir Avenue from the temporary officers' quarters built in 1940 at the end of Officers' Row. This new BOQ was located adjacent to a group of officers' quarters built along Morse Avenue (Buildings 401–414).

Building 400 is a notable example of the International Style; it is the only building of this style at Fort Clayton and is one of only three or four such military buildings constructed in the entire Canal Zone. Like other classic examples of the International Style, Building 400 was intentionally devoid of decorative details. It had smooth white stucco walls, a flat roof with a wide overhang, cantilevered sections, and plain round porch supports. The entire exterior—foundation, floors, walls, and roof—was constructed of concrete [6.13]. Style modifications were made for the tropical climate, including flat concrete mediaguas and a partially open ground-level floor for parking and utilities. Cantilevered balconies provided shelter for lower openings on one side.

Six stairwells led upward from the ground floor. Adjacent to the stairwells were storage rooms and toilet facilities for janitors and maids. Laundry facilities were spaced along the ground floor as well. Both the first and second floors had 12 identical



[6.13] Building 400, showing cantilevered balconies.

apartments, each with a living room, kitchen, bedroom, and bath. The living room was entered from the stairs, and a door to the balcony led from the living room. The bedroom was separated from the living room by a 32-inch-high counter/wardrobe; the space from the countertop to the ceiling was filled with a wooden lattice partition that could be left open for ventilation or closed off with a sliding cloth curtain for privacy. A door to the bedroom was to the side of this counter. Windows were metal jalousies. Large ventilating fans were located on the roof. The jalousies were replaced with aluminum awning windows on the second and third floors in 1968. Masonry infill was applied where needed to reduce the size of the window opening. Also at this time, a hole was cut in the wall below the center of the living room window for an air conditioning unit.

Building 400 was extensively repaired in 1987, and the air conditioning system was upgraded in 1989.

Noncommissioned Officers' Quarters. Funding for the NCO quarters (Buildings 350–385) came from leftover World War II appropriations. An identical set of quarters was built at Albrook Field from plans drawn up by the District Engineer's Office in 1947. The quarters at Fort Clayton were completed in 1949 at an individual cost of \$21,999. This Corps of Engineers design was the first used at Fort Clayton that did not have a raised first floor. The design modification probably arose from the need to minimize construction costs so the available funds would cover the entire project. (The amount spent per unit suggests that there may have been a specific per-unit cost ceiling of under \$22,000.) But since these quarters provided no space for ground-floor parking, carports were provided instead. In these duplex quarters, the carport design was integrated into the housing unit.

The site chosen for these new quarters was on the north side of the block of quarters constructed during World War II (300–340). As the topography of this site was rather steep, the area was graded into a series of plateaus that stepped down to Morse Avenue [6.14]. All the planned quarters would not fit into this area, so eight



[6.14] View from Quarters 370–375 showing terraced earthworks.

were built on the far side of Morse Avenue, running in a line facing the avenue. This placement completed the arc of housing running along the perimeter of the open recreation area.³⁰

The 36 NCO buildings provided 72 identical three-bedroom, one-bath housing units. Constructed on a concrete slab, each one-story building was rectangular, with two 16 ft wings extending to the rear. The exterior walls were concrete block, and the low-pitched overhanging roof was covered with red corrugated asbestos to simulate the appearance of Spanish tile. The original windows were metal jalousies. The interior provided three bedrooms and a bath along the far end and wing. Across a corridor, there was a combined living/dining room, and a kitchen next to the shared wall. In the front center was a covered carport for both families. This extension was matched in the rear by a covered utility area with laundry facilities and a maid's toilet. The extensions were covered by continuous roofing from the main block, and supported by corner posts. There was a front door entering into the living room, and a service door from the carport into the kitchen. A rear door was located in the kitchen, as well.

Built before the widespread introduction of air conditioning, these quarters were designed to ventilate the interior as much as possible. Between the carport and the kitchen, a wooden grille filled space along the top of the wall. All exterior doors had louvered openings. On the interior, the middle bedroom had only one set of windows. To provide some cross-ventilation, the bedroom/hall wall had a wooden grille above the 7 ft height. The living/dining room/hall wall was composed entirely of fixed wooden louvers running floor to ceiling. When central air conditioning was installed in 1976, the interior wood grilles and louvers were removed, and the jalousie windows replaced with double hung sash windows. The openings left by the smaller windows were filled in with masonry blocks.

Construction Under the Capehart Housing Program

The lack of postwar appropriations greatly restricted the ability of the newly reorganized Department of Defense (DoD) to solve its military housing problems. To address these problems several DoD and Congressional programs were created over the years. Among the first of these was the Capehart housing program. Named for Senator Homer Capehart, sponsor of the Capehart Housing Act of 1955, this program provided the military services with some economic leverage to help pay for new housing. Funding for the construction was provided by private lending agencies; once the new housing was occupied, the military service took ownership and retired the mortgages through allowances from an appropriated fund. The Capehart program, along with its predecessor, the Wherry program, supported the construction of approximately 55,000 family housing units (mostly in the United States) before it ended in the early 1960s. The Capehart program promoted the construction of single-family and duplex quarters to enhance the privacy and safety of the occupants. Design criteria specified by DoD included climatic considerations. Warm climates were best served by single-story buildings with low pitched roofs. The enabling legislation for the Capehart program required the use of plans based on modular units for purposes of cost control and design versatility. Simple, rectangular structural forms were preferred for purposes of constructability and economy.³¹

The Capehart quarters at Fort Clayton were the first family housing units that were *not* built on previously undeveloped land. With the large number of barracks built for World War II and the subsequent reduction in troops, the old 1920 infantry battalion barracks were no longer needed while family housing increased in priority. For these reasons the four old concrete barracks were demolished in 1957 [6.15]. Because the old battalion headquarters barracks still served administrative and retail purposes, however, that facility remained standing for a few more years.

The land freed up by this demolition project was designated the site for a group of 1960 NCO Capehart family quarters. (NCO Capehart quarters were also constructed that year at Fort Amador, Curundu, Corozal, and Quarry Heights, and Fort Davis received Capehart quarters in 1962.) Fifty-three of the new Capehart quarters (Buildings 470–481, 804, 806, 808–813, 816–841, 843, 850–867) filled the former quadrangle with six rows of housing on three streets, also annexing the area to the south formerly occupied by the 33rd Infantry stables (which were demolished in the 1950s). A smaller group of 12 Capehart quarters was located toward the medical complex, near the Hospital Road bridge.³³

Built as part of the FY 1958 program, the quarters were completed in 1960 at an individual cost of about \$24,700. The quarters were designed by the Corps of Engineers, Jacksonville District, and Joseph H. Bryson, Architect, Jacksonville under FHA Title VIII Projects #063-81008 Army 1 and #063-81009 Army 2. The duplex quarters were set on a concrete foundation, had concrete masonry walls, and built-up roofs [6.16]. Measuring 96 × 27.3 ft, each building housed two sets of quarters, each with three bedrooms. Each unit included a 12 × 20.6 ft carport on the far end and a 10 × 20 ft patio.

"It's a metamorphosis in concrete, from one-time beautiful, white, up-to-date barracks to heaps of broken, age-stained chunks. This is the story of the first buildings that constituted Fort Clayton, four large barracks fronting Gaillard Highway, that are presently being demolished by a platoon of the 518th Engineer Company. It is referred to as 'Operation Demolition' . . ."³²



[6.15] The 518th Combat Engineers use a "headache ball" to demolish Building 29.



[6.16] 1990s photo of Capehart NCO quarters, Building 820.

Each unit had two entrances—one off the carport into the kitchen and one at the front that opened into the living room (which was adjacent to the kitchen). A dining room adjoined the kitchen in the rear. A central hallway led to the sleeping quarters with two bedrooms on one side, and one bedroom with a half bath, and a full bath on the other side. All windows were aluminum jalousie with glass louvers. Next to the front door, toward the center, was a decorative masonry wall to provide some privacy for the two families of occupants in each duplex. The same decorative masonry was used to construct the two piers supporting the carport. Central air conditioning was installed in 1977–1978.

The jalousies were replaced with single-hung aluminum sash windows in 1981, and some of the exterior wall opening was lost. The carport and patio roofs were replaced in 1984.

1964 Bachelor Officers' Quarters

Two identical 8-man BOQs (Buildings 157 and 500) were constructed in 1964 at a cost of \$49,991 each. Building 157 was located across Muir Avenue from the southern edge of the original officers' quarters area, and at the northeastern end of the line created by barracks Buildings 154–156. The second BOQ, Building 500, was located at the entrance to the hospital-area NCO housing. The one-story rectangular structures measured 105.1 × 30.5 ft, with the front center area recessed approximately 4.5 ft. Set on concrete foundations, the concrete block walls supported a built-up roof. The structures were duplexes, with two identical halves. Entrance doors were located at the outer edge of the recessed area, and led into an entrance hall. Toward the center was the kitchen, and the hall terminated in the living room, which was behind the kitchen. There was a 10 × 16.5 ft concrete terrace accessible from the living room. A hallway led toward the outer end of the building where four bedrooms formed a square. Two bedrooms shared a common bath located between them. Building 157 had on-street parking with two 2-car carports. Building 500 had a detached garage and parking lot off the road south of the BOQ. Central air conditioning was part of the original design. Covered patios were added in 1969.

1965 NCO Housing

In FY62 the Army began the largest housing project initiated at Fort Clayton up to that time. As a Military Construction, Army (MCA) project, funding was secured through Congressional approval and appropriation as a line item request. As such, each specific housing project had to be approved individually. This was the first of three large MCA-funded projects to increase family housing at Fort Clayton and other Canal Zone posts. This was also the first construction project sited in the undeveloped area across the Cardenas River between the main post and the 1940s-era medical complex. The 123 buildings constructed at Fort Clayton under contract DA-08-123-ENG-4995, completed in 1965, provided 492 NCO housing units. All were apartment-type structures, each housing four families. The four-family plan allowed the Army to save on construction costs (by erecting fewer buildings) but still offered a reasonable amount of privacy to the occupants. Buildings of three different sizes were constructed to provide two-, three-, and four-bedroom units. The per-building

construction costs were approximately \$50,700, \$57,300, and \$66,000, respectively. Carports, which were constructed at the same time, were clustered in groups of three or four in *cul-de-sacs* or alongside the road. Each family was allotted space for one car. Playgrounds away from traffic were constructed in the housing areas.

All buildings were constructed on concrete foundations with concrete block walls and built-up roofs. The three-bedroom style was most common, and included Buildings 532–540, 542–549, 552–555, 557–561, 600–602, 605–606, 608–610, 612–615, 618–629, 632–639, 641–650, 652–653, 655, 657–59, 661–674, 676, 678–685, and 687–691. Measuring 89.3 × 29.3 ft, the rectangular buildings were two stories tall. A recessed central stairway provided access to the upper floor. Decorative concrete blocks provided a screening wall for the second-floor stairway. The low-pitched roof had 3 ft overhangs. Stacked concrete blocks under the windows on the front and sides provided visual relief as spandrels. Aluminum awning style windows were used. Two complete apartments were laid out on each floor. The exterior door led into the living room at the front of the building, and the living room opened into the dining room at the rear. A storage room was accessed from the dining room. The kitchen, also at the rear of the building, was located off the dining room. The first-floor apartments had a back door leading from the kitchen. A flat concrete canopy protected the back door. From the living room, a central hall led back to a full bath on the left, followed by a bedroom with a half bath. There were two bedrooms on the right. The second floor layout was identical, except for the exterior kitchen doors. The apartments were centrally air conditioned [6.17].

There were 11 two-bedroom apartments (Buildings 531, 541, 551, 603, 604, 611, 617, 631, 654, 656, and 677). The two-story rectangular buildings measured 78.6 × 29.3 ft. They were the same as the three-bedroom units except that the central hall had a bath on the right, then a bedroom on each side. Buildings 550, 556, 607, 616, 630, 640, 651, 660, 675, and 686 each had four-bedroom apartments. Each two-story rectangular building measured 102.6 × 29.3 ft. Again, the only difference in layout was the bedroom/bath arrangement. Down the central hall, to the right there was a bedroom, then a bath, then a bedroom with an attached bath. On the left side there were two bedrooms. The second floor was identical, except for the kitchen doors.

The NCO quarters received new galvanized metal roofs in 1984, and had their aluminum awning windows replaced with single-hung sash windows in 1987.³⁴

1965 Officer Housing

As part of the FY62 MCA construction project, 20 units of field grade officer housing were built at Fort Clayton for the State Department. The 10 duplexes (Buildings 22–26, 460–464) housed personnel from the American Embassy and related offices such as the Foreign Information Broadcast Service. This service monitored all radio and television broadcasts from Central and South America. The quarters were constructed in two groups: half on Hawkins Avenue where the original 33rd Infantry HQ (Building 21) had stood, and the other half on Morse Avenue near the group of 1942 officers quarters.³⁵



[6.17] 1990s photo of 1965 four-family, three-bedroom NCO apartments (Building 554).

The two-story duplex quarters were designed and constructed in two styles: three- and four-bedroom. Construction was completed in early 1965 at a per-building cost of about \$41,300 and \$44,800, respectively. Both styles were built on a concrete foundation with concrete block walls. The low-pitched built-up roofs had 3 ft overhanging eaves. Aluminum awning type windows were used. Each unit had a covered carport at the end of the building with a small storage room located near the rear outside end of the carport. Each unit also had a rear terrace, and both types were designed to incorporate an air conditioning system.

The three-bedroom style (Buildings 23, 26, 460, 464) was a rectangular structure measuring 56 × 29.3 ft. A door from the carport led into the kitchen, and a front door led into the living room, which was laid out across the front of each unit. The living room was open to the dining room at the back of the unit across from the kitchen [6.18]. A rear door led out from the dining room to the terrace. Stairs in the rear corner of the living room led upstairs. The second floor had three bedrooms forming three corners of the unit. The last corner was occupied by two full baths, one of which was a master bath attached to a bedroom.

The four-bedroom style was dissimilar in appearance to the three-bedroom buildings: these two-story units were joined by a one-story middle section that housed the master bedroom and attached full bath for each unit—one behind the other. The unit layout was essentially the same as the other styles in the two-story sections except the second story had only one full bath and a storage area. The terraces were converted to covered patios in 1969, with masonry columns supporting a corrugated metal roof.

1969 Officer, NCO, and Civilian Housing

The second large postwar MCA housing project in the Canal Zone was completed by 1969. Plans were drawn up in 1967 by the Jacksonville District, Corps of Engineers, and Joseph H. Bryson, Architect-Engineer, Jacksonville. This project



[6.18] 1965 two-story duplex officers' quarters on Morse Avenue.

included housing for Fort Clayton, Fort Davis, Fort Gulick, and Quarry Heights under contract DACA 17-68-C-0027. The largest share of housing went to Fort Clayton, where 236 units were built. Two areas of NCO quarters were built with a total of 118 units. The first was a continuation of the 500 housing area near the hospital, and included Buildings 570–581. The second (Buildings 700–709, 715–726) was an extension of the 600 area, which also was across the Cardenas River from the main post. This project also included officer and civilian housing, both located south of the hospital off the Clayton-Albrook Road in a previously undeveloped area. The 64-units of officer housing (Buildings 1000–1003, 1005–1007, 1009–1010, 1012–1014, 1023–1033) were sited nearest the hospital. The civilian housing area was further to the east, and comprised 54 units (NCO and officer styles) in Buildings 1041–1043, 1047–1062. The housing areas were laid out with the buildings or parking facilities clustered along and at the ends of dead end streets.

All buildings and apartments in this project were two stories and configured in groups of two, four, or six apartments per building. All were built on concrete foundations with concrete block walls and low-pitched built-up roofs. Air conditioning systems were built in, and the compressors, in either the front or rear of the unit, were surrounded by decorative concrete masonry walls. All buildings had single-hung aluminum windows on the first floor and double-hung sash windows on the second floor. Six basic styles were used for the housing units. High-ranking officers quarters were two-family units and were distinguished by the addition of a dining room, extra storage space, and individual carports.

The two-bedroom units were constructed as four-family (EC2D4) and six-family buildings (EC2D6). The second floor of this building style had vertical grooved plywood siding on the front, with plywood panels under the windows. These quarters were for both NCO and CGO (company grade officer) personnel. The front door led into an entry hall with a kitchen on the left and a half-bath/laundry combination on the right. The hall ended in the living room, which occupied the rear of the unit. An exterior door led to the patio in the back. Concrete masonry privacy walls extended out from the ends of the units, and the middle area between each pair of units provided a storage room for each family. Stairs in the living room led up to a full bath, storage room, and two bedrooms laid out along the outer wall.

The three-bedroom, four-family (E3A4) NCO units had the same exterior as the two-bedroom buildings, including plywood siding and the same types of privacy walls and storage areas in the rear. The front door led to an entry hall with the bath/laundry combination on the left and the kitchen on the right. The living room occupied the rear of the unit and had a door to the patio. Stairs led from the living room to the second floor. Two bedrooms were laid out against the back wall and one was located at the front outside corner. A full bath occupied the inside corner.

The four-bedroom NCO units came in two sizes: four-family (E4A4) and two-family (E4A2). The design was identical to the E3A4 with two exceptions. First, the exterior of the second floor had horizontal plywood siding on the front and rear [6.19]. Second, there were bedrooms in every corner of the second floor, and the full bath was placed at the middle of the interior wall. The four-bedroom CGO units also

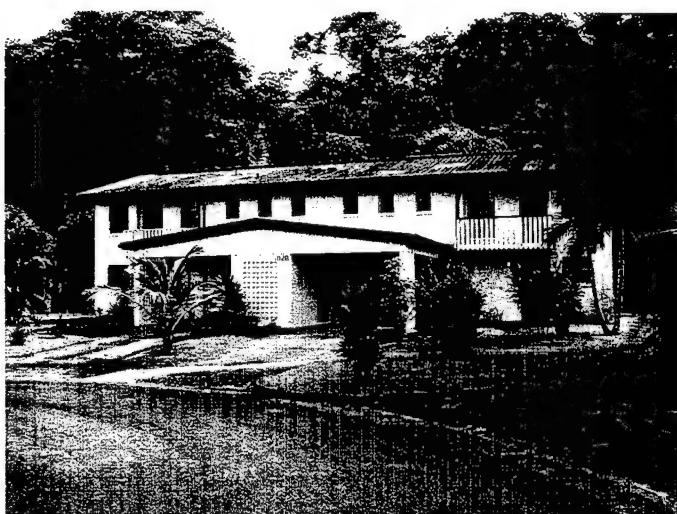


[6.19] 1969 NCO housing (Building 726, front) showing horizontal siding on exterior.

came in both four-family (C4A4) and two-family (C4A2) sizes. These were identical to the NCO four-bedroom units except for the second floor exterior having the vertical grooved plywood siding and plywood window panels on the front and rear.

There were two field grade officer (FGO) housing configurations constructed under this program: a three-bedroom and a four-bedroom building. Both types were duplexes providing individual carports as part of the design, with stacked concrete blocks beside the doors to highlight the front elevation, and second-floor balconies. The three-bedroom units (F3B2) had two carports located at the center front of the building, and there were two concrete masonry storage buildings between the carports. The carports had front-gabled, low-pitched roofs; the gables were filled with vertical plywood siding. Concrete masonry piers supported the roof on the front and sides of the carports. A carport door led into the kitchen, and a front door led into an entry hall. The bath/laundry room on the left was followed by a closet, with a stairway leading up on the right. The living room was placed at the outside rear corner of the unit and was open to the dining room located behind the kitchen. A rear door led from the dining room to the patio. Upstairs a center hallway led to bedrooms in the rear corners and the front outside corner, with a full bath at the front inside corner. The front bedroom had access to the balcony [6.20]. All bedrooms had walk-in closets. The master bedroom, located at the rear inside corner, had a full bath.

The four-bedroom FGO style (F4A2) had carports on either end of the building. Covered with side-gable, low-pitched roofs, the carports had concrete masonry walls along the outside and partially across the front. The interior of this wall provided a line of wooden cabinets with louvered doors [6.21]. A carport door led to the kitchen, and the front door led to an entry hall. A stairway was located on the left side of the hall, and the bath/laundry room was located on the right. The hallway opened into the living room in the inside corner which, in turn, was open to the dining room behind the kitchen. A door from the dining room led outside to the



[6.20] 1969 officer housing (Building 1028) showing center carports with storage areas and second-floor balconies.



[6.21] 1969 officer housing (Building 1061) showing detail of louvered folding doors for carport storage area.

patio. The second floor had a full bath and a master bedroom that extended the length of the outside wall, with a walk-in closet and full bath attached. Across the hall, there were two bedrooms along the rear and one in the front inside corner. This last bedroom had access to the balcony.

In 1971 some additional finishing work was done on these housing areas. Concrete patios were completed for all units, new play areas were installed complete with equipment, and new sidewalks were added. Over time the built-up roofs were replaced with corrugated metal.

Operations and Support Facility Construction

Operations and support construction during this era was minimal, and mostly completed by the mid-1950s. Structures completed during 1947 included a water tank (Facility 450), radio station (Building 913), and warehouse (Building 178).

The water tank was located in a secluded area on the hill near Quarters 434, and was a duplicate of one constructed at Albrook Air Force Station. Both tanks, which held 750,000 gallons, were built of concrete with a corrugated iron shed on a platform halfway up the tank. Farther up the hill was the radio station, which in 1971 was changed in designation to a general-purpose warehouse. The 25 × 20 ft concrete building was demolished by the Corps of Engineers in 1978. Building 178, which was constructed in February 1947, was designed as a warehouse to service the 11th Engineers compound northwest of the stable/motor pool area.

A new installation entrance and sentry booth (Building 99), built in 1954, put a fresh face on Fort Clayton [6.22]. Completed at a cost of \$1440, the 41 sq ft concrete guard booth measured 4.6 × 9 ft.



[6.22] The new main entrance to Fort Clayton under construction (c. 1954).



[6.23] The original (side) gate at Fort Clayton, September 1953.

In 1988 this guard booth at Fort Clayton (along with others at various Canal Zone installations) was demolished and replaced with a similar structure as part of a routine upgrade. A major landscaping and security upgrade project at the front, side, and rear gates of Fort Clayton was undertaken in 1993 as part of the worldwide Army Communities of Excellence (ACOE) program [6.23]. One of ACOE's several goals was to improve the visual environment—both natural and built—of Army installations.

The final significant construction during this era was the construction of a small arms pistol range (Facility 235) and a range house (Building 236), both completed in 1956. Located northwest of Building 180, the range was located at the top of a hill overlooking the Coast Artillery barracks quadrangle [6.24]. When completed, the



[6.24] Overview from the pistol range.

pistol range included ten targets, at 50-, 35-, 25-, and 15-yard distances. The range house, which was built on a concrete pedestal with earth-and-gravel flooring and open walls, was relocated to Fort Clayton from Fort Sherman. A 14 ft high observation tower (Facility 240), also erected in 1956, completed the range.

Community Facilities

Most of the construction at Fort Clayton during this era, other than housing, consisted of community social, education, recreation, and athletic facilities. Like the housing built during this time, the design and style of these facilities reflected the new family-oriented Army. Clearly it was no longer true that "If soldiers were intended to have wives and families, Uncle Sam would have issued them." Instead, Uncle Sam was building places for them to live, work, and play [6.25, 6.26].



[6.25] Soldiers catch their breath after running physical training.



[6.26] Petting zoo in Miller Field recreation area, 1950s.

Reutilization of Building 95 as Community Services Center

Utilization of Building 95 changed radically in 1961 when it was remodeled and converted into a community services building with a PX [6.27]. The first floor contained retail space, a cafeteria and kitchen, offices, tailor shop, watch repair shop, dry cleaner, shoe repair shop, photo shop, barber and beauty shops, radio/TV repair shop, and laundromat. Warehousing and receiving occurred in the rear. The second floor contained more retail space, stock rooms, offices, and warehouse space. The third floor held offices for PX staff. A large parking lot was built primarily for Building 95 about the same time. Located at the corner of Morse and Gaillard Avenues, it had spaces for 198 cars.

In addition to the PX, the first floor of Building 95 housed a post office and the Army Education Center with offices and laboratories for language and radio code studies. On the second floor, the Post Library moved in during 1962. The third floor held additional facilities for the Education Center, with classrooms, study rooms, and an assembly room. The building also served as Post Headquarters. By 1973, some shuffling of occupants had occurred with a thrift shop, a library service center, a recruitment office, dry cleaners, optical shop, and Cub Scout office having moved into the first floor.

Post Chapel

The original temporary wood-sided post chapel was replaced in 1965 with a permanent concrete structure. Constructed on the same site as the temporary structure, and designated as Building 64 like its predecessor, the new chapel was designed by the firm of Herschel E. Shepard, Jr. (Architect) and Evans & Hammond, Incorporated (Engineers), of Jacksonville, Florida. The plans were approved in Panama by Colonel Harold R. Parfitt, representing the Corps of Engineers district office. Colonel Parfitt went on to serve as the last Governor of the Canal Zone prior to its abolishment in 1979.



[6.27] The Post Exchange Shopping Center at Building 95.

As originally designed, the chapel contained a bridal room, choir room, two assembly rooms, a kitchen, chaplain's office, and chaplain's assistant's office, as well as the traditional military multi-denominational altar and ark rooms, narthex, nave, chancel, baptistery, sacristy, vestibule, and confessional. The building was designed with central air conditioning, which was a growing trend at that time. The chapel was officially dedicated in a ceremony held on 9 May 1965. Prior to the transfer of Fort Clayton in 1999 a commemorative medallion was struck recognizing the chapel's 35 years of service to the Panama Canal community.³⁶

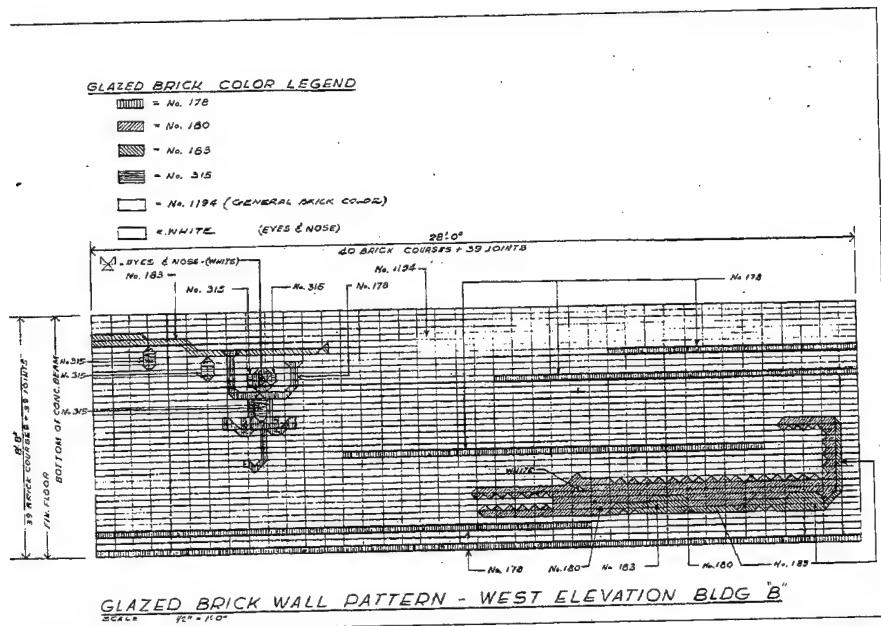
Curundu Elementary School

A new school, the Curundu Elementary School, was constructed at Fort Clayton for the opening of the school year in the fall of 1967.³⁷ This was Fort Clayton's second school building, the first of which had been established in 1962 by renovating Building 129 for that purpose. Like the other schools in the Canal Zone, Curundu Elementary was managed by the Panama Canal Company (PCC) until implementation of the Panama Canal Treaties of 1977, when it was transferred to the jurisdiction of the Department of Defense Dependents' School (DoDDS) system. The school complex, which was composed of four centrally air conditioned main buildings, was located on a secluded tract of land near the back gate of Fort Clayton. Building 775 (originally designated Building 616-A) was sited parallel to Clayton-Albrook Road. Building 776 (originally designated Building 616-B) was sited just south of Building 775, and perpendicular to it. Next to that building and parallel to it was Building 777 (originally 616-C). These three classroom buildings housed a total of 46,976 sq ft. Each building was 64 ft wide and 197–283 ft long. A play shelter, Facility 778, was located immediately north of Building 775.

Building 776 held eight classrooms flanking a central hallway, two "itinerant teaching" rooms, restrooms, two multi-purpose rooms, an air conditioning equipment room, and a storage room. Building 777 comprised 14 classrooms flanking a central hall with restrooms in the center of the building. By 1988, when the buildings were upgraded, Building 775 housed a general office room, principal's office, teachers' lounge, nurse's office, four kindergarten rooms, seven other classrooms, two special education rooms, restrooms, and two air conditioning equipment rooms. All three buildings were constructed with concrete floors on a reinforced concrete foundation with concrete block walls and metal roofs. Decorative features were limited to whimsical animals on glazed brick on the street-side of Building 776 [6.28].

Under both PCC and DoDDS management, schools in the Canal Zone were similar to schools in the United States in terms of academics, athletics, and extracurricular activities. Soccer, football, baseball, and track and field were offered as after-school activities at all levels of education.

In 1992 two relocatable buildings (Buildings 780 and 781) were added to the Curundu Elementary School complex. A third (Building 782) was added in 1993. When the property was transferred to the Republic of Panama in 1999, its total value was assessed at \$1,569,091.



[6.28] Monkey and alligator detail for glazed brick wall, Curundu Elementary School.

Athletic and Recreation Facilities

In January 1947 the Commanding General, Lieutenant General Willis D. Crittenden, announced changes to the military training program that were intended to promote a higher level of physical conditioning. Crittenden's goal was to create 'an ambitious sports program that would enable every individual in the command to participate in at least one sport.'³⁸ A consequence of the new athletic program was the construction of a host of new facilities, but these were intended for use not only by active duty personnel, but by their families as well.

Golf Clubhouse. The first undertaking was the construction of a golf clubhouse (Building 167) near the Miller Field grandstand (Facility 48), completed 21 September 1949. Built on a concrete foundation with concrete flooring, the walls of the building were of wood and prefabricated metal with numerous openings for ventilation. The roof was of prefabricated metal and tarpaper. Originally measuring 20×56 ft, two 16×31 ft offsets were added in the 1950s expanding total space to 1386 sq ft. In 1969, a pro shop and club storeroom were added to the facility.

By February 1980, the golf clubhouse was being used as an officers' club annex.

Swimming Pool. Facility 452, a 50-meter Olympic-size swimming pool was constructed in April 1948 to replace the original pool (Facility 55). Similar facilities were constructed at Fort Kobbe, Fort Davis, and Fort Gulick. The concrete swimming pool complex included bathhouses for men and women, a children's wading pool, a spectators' viewing stand, and a snack bar. The floor surrounding the pool was made of terra cotta tile.

The swimming pool was named in honor of Forrest Estey Williford, Brigadier General, U.S. Army [6.29]. General Williford was a graduate of the United States Military



[6.29] Training exercise at Williford Swimming Pool.

Academy (Class of 1906) and the recipient of numerous awards. His foreign tours included serving various positions with the Harbor Defenses of Balboa at Fort Amador with the 4th Coast Artillery from October 1936 to October 1938. General Williford retired from active duty on 31 January 1944 and died on 17 March 1955.³⁹

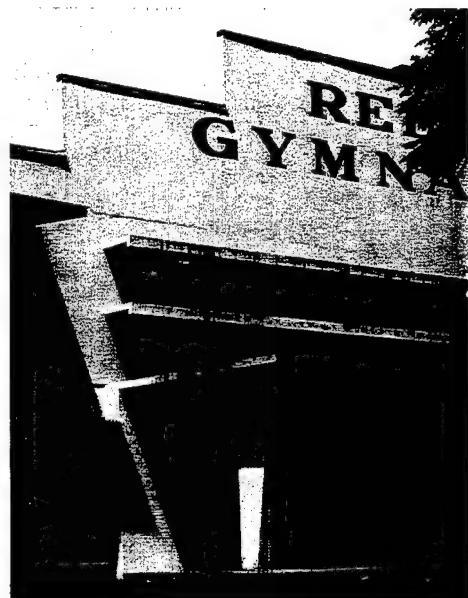
Two concrete bohios were constructed onsite in front of the pool in 1979.

Athletic Court for the Medical Complex. In June 1950 an athletic court (Facility 524) was constructed near the Sector Hospital barracks. The court consisted of a concrete slab surrounded by poultry wire fencing.

In August 1991 the athletic court was converted to an 8-unit air conditioned kennel for pets of guests visiting Building 518 in the medical complex.

Gymnasium. The original hangar gymnasium was replaced on 19 June 1951 with a permanent gymnasium building [6.30, 6.31]. The new facility, Building 52, housed 19,288 sq ft and accommodated 1800 spectators. The entire building was made of concrete except for the corrugated metal roof. The building, which measured 140 × 122 ft, was taken up primarily by court floor space, with bleachers on either side. The partial second floor measured 96 × 23 ft. There was no interior wall to the second floor room, only security screening to prevent anyone from falling to the first floor.

In December 1956 the gymnasium was named in honor of Colonel Russell Potter Reeder, Sr. Although Colonel Reeder was trained in the medical field, his military career was as a soldier, not as a physician. In addition to serving wartime duty during both the Spanish-American War and World War I, Reeder was Commander of the Coast Artillery at Fort Sherman in the 1920s.⁴⁰



[6.30] Detail of Reeder Gymnasium, Building 52.



[6.31] Soldiers run physical training in Reeder Gymnasium, Fort Clayton.

Softball Fields. Several softball fields and grandstands were constructed during this era. They included Jarman Field, Carnes Field, and Johnston Field.

Jarman Field. A 337-seat grandstand (Facility 394) and softball complex was constructed on the large flat expanse of grass northeast of Building 129 in March 1953 [6.32]. Constructed of concrete and corrugated aluminum roofing, the facility changed little over the years. The softball complex included the main softball diamond in front of the grandstand plus a little league softball diamond. Both diamonds had two dugouts, a scoreboard, and a backstop. A press box was added to the complex in 1975, and night lighting was added in 1980.



[6.32] Jarman Field grandstands.

On 5 January 1957, just before a baseball game between Fort Amador and Fort Clayton baseball teams, a ceremony was held dedicating the field in honor of Major General Sanderford Jarman. General Jarman had served in the Panama Canal Department from 1 November 1939 to 2 August 1941 as Commanding General, Coast Artillery Command. General Jarman, a graduate of the United States Military Academy, retired from military service in 1946 and died on 15 October 1954.⁴¹

The name Jarman Field came to be synonymous with the entire park area, which included the golf course, tennis courts, and swimming pool.

The final element of Jarman Field was a jump tower (Facility 173) installed across the street from the Fort Clayton Elementary School (Building 129) in the 1990s.

Carnes Softball Field. The Carnes Softball Field (Facility 224) was constructed immediately west of Building 220 and south of Building 201 in September 1971. The field was dedicated to Lieutenant Colonel Ambrus Durward Carnes who had served a tour of the Panama Canal Zone with the U.S. Army, and who was the recipient of the Silver Star, Bronze Star, Air Medal, Army Commendation Medal, and Combat Infantryman's Badge. The Carnes Softball Field included a small set of metal bleachers, a scoreboard, and night lighting.⁴²

Johnston Softball Field. Johnston Softball Field (Facility 228) was constructed around 1971 immediately in front of Buildings 208 and 210. The facility consisted of a softball diamond, bleachers, and a small storage building. The field was dedicated to the memory of Lieutenant Colonel Robert Johnston, U.S. Army, "for his devotion to duty and furtherance of Operation Friendship through athletic events, 5 August 1961."⁴³

Enlisted Men's Service Club (Valent Recreation Center). Groundbreaking for Building 53, a new enlisted men's service club, was held at Fort Clayton on 25 June 1973.⁴⁴ The building, located on the former site of the original post gymnasium and bowling alley, was completed on 5 May 1975. The concrete building was designed with central air conditioning, and enclosed 19,630 sq ft of floor space. The building measured 130 × 151 ft and was completed at a cost of about \$802,000. As originally designed the building contained reading and writing rooms, a TV room, a cards room, six music rooms, a game room, a lobby and information area, several offices, a kitchen, lounge, and a ballroom with stage. The center was dedicated in honor of Othon O. Valent, Command Sergeant Major, U.S. Army Forces Southern Command (August 1969 to May 1973).⁴⁵

Architecturally, the building was designed to reflect the Bellavistino Style of Building 39, the original Enlisted Men's Service Club. Both entrances of Building 53 included arched canopies reflective of the arches typical of Bellavistino architecture, but the roof was executed in a modified mansard style.

A Home to the Force

During the first two decades after World War II Fort Clayton was transformed by global nuclear politics, construction technology advances, and middle class aspira-

tions into an American community—a company town whose main business, as always, was to guard the gates between two oceans.

Construction programs at Fort Clayton during this period provided the Army's new professional soldier a home with all the amenities of a typical American town: a 'neighborhood' school, a dispensary, a commissary, a PX and snack bar, social clubs for commissioned officers and NCOs, a new swimming pool and gymnasium, a bowling alley, golf course, two theaters, and chapel. Family housing included 144 sets of officers' quarters and 869 sets of enlisted men's quarters. By the end of this period the available housing stock at Fort Clayton had increased even more.⁴⁶

By 1977, when the Panama Canal Treaties were signed, Fort Clayton had virtually assumed its final form. Due to the impact of the treaties, Fort Clayton's role would change markedly, and it would remain vital to the U.S. military until the very end. The next 20 years would bring periods of tension, conflict, and reconciliation between the Panamanian government and the U.S. military. And Fort Clayton would be at the center of momentous events.

Notes for Chapter 6

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CHAPTER 7

From Treaty to Transfer (1979–1999)

After the Treaty

The End of the Canal Zone

The Panama Canal Treaties were put into effect 1 October 1979, also known as Treaty Implementation Day. The effects were far-reaching and touched almost every aspect of life for U.S. citizens living in the Canal Zone.

The most immediate and conspicuous impact on Americans was the dissolution of the Panama Canal Zone as a U.S. political jurisdiction: the strip of land formerly known as the Canal Zone reverted to the Republic of Panama. Both the Panama Canal Company and the Canal Zone Government were likewise dissolved. A new controlling authority called the Panama Canal Commission (PCC) was established. The PCC staff was a mix of Americans and Panamanians, but over the next 20 years the percentage of Panamanian employees increased steadily until the eve of the canal transfer to Panama, at which time only a handful of U.S. citizens were still involved with running the canal.

Another important change was the transfer of security responsibilities in civilian areas from Canal Zone police to the Guardia Nacional of the Republic of Panama—the country's military police.

Immediate Impacts on U.S. Military Bases

Naturally, the treaty also signaled dramatic changes for U.S. military forces in Panama. On Treaty Implementation Day, most U.S. military installations were redesignated as "Defense Sites." It was agreed that these sites would remain under the control of U.S. forces until 31 December 1999, and were authorized to be used for defense purposes. The Defense Sites specified by the treaty were Fort Clayton (including Corozal), Fort Davis, Fort Sherman, Fort Kobbe/Howard Air Force Base, U.S. Naval Station Rodman, Marine Barracks, Albrook Air Force Station, plus several depot and communication sites. Other installations were redesignated as "Military Areas of Coordination," with both nations sharing security responsibilities and some uses. This arrangement allowed partial transfer of facilities to the Republic of Panama while continuing to help meet the housing, communications, training, and support needs of U.S. troops stationed there. The Military Areas of Coordination included Quarry Heights, Fort Amador, Fort Gulick, the Curundu Army housing area, the U.S. Naval Station Amador, and various miscellaneous facilities. The schools, hospitals, and commissaries previously run by the Panama Canal Company were transferred to DoD: Gorgas Hospital became the property of the U.S. Army Medical Corps and the schools became part of the DoDDS system. As final transfer approached, school enrollment steadily decreased as the number of Americans on the PCC payroll declined, troop reductions continued, and the political situation in Panama worked

through instabilities. Nevertheless, DoD continued to provide schooling for U.S. military dependents through spring 1999.¹

In addition to the basic changes in the designation of U.S. military installations, treaty implementation required that many activities and units be relocated. Most of these relocations impacted Fort Clayton, which was the only remaining Army Defense Site on the east bank of the Pacific side of the Panama Canal. For Fort Clayton, the period between treaty signing and implementation was a time of intensive planning. Fort Amador had housed the Army headquarters in Panama, but treaty compliance required U.S. authorities to turn over the facilities at Fort Amador that had housed the headquarters. As Panama's Defense and Security Commission moved in, along with elements of the Guardia Nacional, Army headquarters activities had to move out. These activities were transferred to Fort Clayton, which was renamed Headquarters, 193rd Infantry Brigade (Panama) in anticipation of the dissolution of the Canal Zone. This transfer brought the relocation of Headquarters and Headquarters Company and the 470th Military Intelligence Group from Fort Amador to Fort Clayton in September 1979. Major units of the 193rd Infantry Brigade (Panama) already located at Fort Clayton at that time were the 4th Battalion (Mechanized), 20th Infantry; 193rd Combat Support Battalion, including the 475th Transportation Company (Light-Medium Truck), the 193rd Military Intelligence Company, and the 396th Signal Company; Headquarters Command, including Headquarters and Headquarters Company, 601st Medical Company, and 79th U.S. Army Band; the 534th Military Police Company and Headquarters Company; and the Defense Mapping Agency, Inter-American and Geodetic Survey.

Little new construction was required for these activity realignments, but some building modifications were necessary to adapt existing structures to the requirements of the new activities they housed. Specifically, a coordinated series of building alterations was executed in two phases.²

In general terms, the greatest impact of treaty implementation on the Fort Clayton built environment was to eliminate any and all reasons for future installation expansion or significant new construction programs under the auspices of the U.S. Department of Defense.

1986 Command Structure Reorganization

A reorganization on 4 December 1986 reactivated the United States Army South (USARSO) as a major Army command and the Army component of the United States Southern Command. Fort Clayton was chosen to house the headquarters for the new command, and the renamed 193rd Infantry Brigade (Light) was made a subordinate command of USARSO. The new major command was headquartered in Building 95, the original 2nd Field Artillery battalion barracks built in 1933. By the late 1980s, Fort Clayton hosted the largest group of Army facilities in the Republic of Panama. Other units headquartered or based at Fort Clayton by 1989 included the 128th Aviation Brigade (Provisional), the Military Police Command (Theater) (Provisional), Community Operations Agency/U.S. Army Garrison, 1109th U.S. Army Signal Brigade, U.S. Army Security Assistance Agency Latin America, and the Southern

Command Network (Radio/TV). By 1995, these units had been joined by the 59th Engineer Company, 3rd Special Operations Support Command (Airborne), 154th Signal Battalion, and 536th Engineer Battalion.³

New Missions After the Cold War

Security, Training, and Humanitarian Operations

During this period the emphasis on defense of the Panama Canal remained primary. At the same time, however, as the U.S. government sought to support democracy throughout the hemisphere, Central and South American countries became higher priorities in U.S. international relations. A related development, which was also spurred by domestic public opinion during these decades, saw the U.S. government begin to enlist the services of DoD to fight the export of illegal drugs into the United States from regions south of the border. These trends combined to create new secondary missions for USSOUTHCOM. Specific activities of USSOUTHCOM included support of U.S. Security Assistance Programs in Latin America; planning and executing disaster relief operations; conducting search and rescue operations; and support of combined inter-American training exercises.⁴

USARSO's geographic area of responsibility included 19 Latin American countries. Under USARSO, the 193rd Infantry Brigade was tasked to defend the Panama Canal, increase the capability and professionalism of Latin American armies, train U.S. Infantry battalions in jungle operations, provide training support for partnership units, and support U.S. Southern Command contingency missions.⁵

Training for New Missions

The average daily USARSO troop strength in the mid-1990s was 6000 personnel. In order to implement its missions, USARSO conducted training exercises both for Canal defense and for Latin American support. These exercises were conducted throughout Panama and Latin America; they involved active duty and reserve troops as well as personnel from partnering countries. In addition to standard combat training, USARSO conducted exercises to prepare troops for drug interdiction efforts and humanitarian operations. This latter mission included disaster relief operations and construction projects to modernize public infrastructure throughout the region [7.01]. Starting in 1994 USSOUTHCOM conducted *Operation Safe Haven* to relieve overcrowding in camps set up at Guantanamo Naval Base, Cuba, to house refugees who had been attempting to flee Cuba by sea. Under *Operation Safe Haven* camps for nearly 9000 Cuban emigrants were established in Panama.⁶

In addition to carrying out their official duties, many personnel from Fort Clayton took part in assistance programs specifically for the people of Panama. Civic

[7.01] A soldier talks with a mother and her children during a disaster relief operation in Bolivia.





[7.02] Flag-waving Kuna Indians from the San Blas Islands welcome U.S. Army soldiers to their village.

action operations were as meaningful to those providing assistance as they were to those receiving the aid [7.02]. Individual units, wanting to share their gifts, began 'adopting' Panamanian communities through the Christmas Sponsorship Program.

Fort Clayton and *Operation Just Cause*

A Dictatorship is Born

Political developments in the Republic of Panama during the 1980s created increasingly intolerable conditions that ultimately required international intervention on behalf of the Panamanian people. As events finally came to a head in December 1989 USARSO found its traditional and new missions converging in a military action that would free the citizens of Panama from the human rights abuses and criminal activities of General Manuel Antonio Noriega, military strongman and *de facto* ruler of the increasingly beleaguered Central American nation. Thanks in large part to the extensive training carried out in support of USARSO's post-implementation missions, *Operation Just Cause* quickly set the stage for the restoration of democratic government in Panama—and Fort Clayton was at the center of the action.

Tensions between the United States and the Noriega government had been building for years. Originally supported by the U.S. for assistance with counter-drug operations, Noriega's excesses and political abuses soon alienated him from his American supporters. Noriega had been strengthening his position through the increasingly militarized Guardia Nacional, which he had restructured and renamed the Fuerzas de Defensa de Panama (Panama Defense Forces or PDF) in 1983. Under his control during the 1980s the PDF expanded rapidly to a strength of 16,000. Also during this time, anti-Noriega protests by Panamanian citizens increased and an opposition political party was formed.

The two major coalition political parties met head-on in the 1984 presidential election. The National Democratic Union, Noriega's party, presented banker Nicolas Ardito Barletta as its candidate. The Democratic Opposition Alliance supported the candidacy of former President Arnulfo Arias. After a delay of several days the government declared Barletta the victor, and the opposition responded with accusations of massive election fraud. The ongoing protests increased in strength when President Barletta sought to impose austerity measures, and support for him soon began to dissolve as financial problems loomed and political oppression intensified. Finally, on 28 September 1985, Barletta resigned his office, but political unrest continued. Serving to destabilize the situation further, a PDF officer stepped forward to confirm allegations that Noriega was involved in large-scale money laundering and drug trafficking activities. This revelation sparked riots, and the streets were flooded with Panamanians from all walks of life demanding that Noriega step down. By the end of 1987, U.S. policymakers agreed.⁷

Noriega was indicted on drug-related charges in February 1988 by grand juries in Miami and Tampa, FL. In order to put pressure on the Noriega regime the U.S. suspended all military and economic assistance payments to the Panamanian government. Noriega's government responded to the rising tide of protest by shutting down opposition media outlets. To augment the PDF Noriega created his so-called "Dignity Battalions"—hired muscle organized as civilian paramilitary terror squads. Rival PDF officers attempted a coup in March 1988, but Noriega survived. Unrest continued but organized opposition seemed to have been thwarted.

The United States Draws the Line

Even though Noriega had his hands full with domestic strife, by 1988 he seemed determined to pick a fight with the United States as well. He deliberately provoked the United States during this period by condoning the harassment of Americans in Panama, distributing anti-U.S. propaganda, and even supporting incursions into U.S. military installations.

In the presidential election of 7 May 1989 opposition candidates won the popular vote, but Noriega's government annulled the results claiming that they were tainted by election-related violence and foreign influence. The inevitable outburst of new protest was met in the streets with government violence, and opposition candidates were severely beaten by the Dignity Battalions. As the harassment of U.S. diplomats and military personnel continued, the United States denounced Noriega's annulment of the election results and called for his overthrow.⁸

In addition to the official pressure applied to Noriega and his government, U.S. political and military leaders were taking practical steps to address the growing turmoil created by Noriega. As harassment of U.S. personnel increased in late 1988, DoD and the State Department began reducing the number of military dependents and civilian diplomats in Panama. President Bush recalled the American Ambassador and ordered diplomatic dependents to move onto military installations. Contingency planning for a possible military confrontation began in February 1988, and a month later U.S. forces were sent to provide additional security at U.S. installations in Panama—the

first of four such deployments. Joint Task Force-Panama was activated on 9 April 1989 to coordinate the planning. After the election fiasco in May 1989 President George Bush ordered 1900 additional combat troops to Panama. This augmentation, code-named *Operation Nimrod Dancer*, began on 11 May 1989 and continued into June. On 22 May *Operation Blade Jewel* accelerated the relocation of all U.S. personnel and their dependents to Defense Sites or Military Areas of Coordination. Contingency planning for military operations intensified during the summer, and the U.S. began conducting joint training/freedom of movement exercises (codenamed *Sand Fleas* and *Purple Storms*), often in close proximity to PDF forces. General Maxwell R. Thurman was sworn in as USSOUTHCOM Commander in Chief on 30 September 1989.⁹

On 3 October 1989 a second coup failed to oust Noriega, and it became clear to the Bush administration that the Panamanians would need international help to remove him from power. Plans were set into motion for the removal of Noriega and neutralization of the PDF through an intervention of overwhelming military force.

On 15 December 1989 Noriega declared Panama to be at war with the United States and threatened the lives of the 35,000 U.S. citizens in Panama. The final provocation came the next evening. When four unarmed U.S. servicemen lost their way while driving in downtown Panama City they were detained at a roadblock in front of PDF headquarters in the neighborhood of Chorrillo. As the driver turned the car and fled, PDF troops fired on the vehicle, killing one of the occupants. A Navy lieutenant and his wife who witnessed the incident were detained and assaulted by the PDF. On the following day, 17 December 1989, President Bush ordered the initiation of *Operation Just Cause*.¹⁰

Liberating Panama

Operation Just Cause had four objectives: (1) depose and capture General Noriega, (2) protect American citizens, (3) keep the Panama Canal operating safely, and (4) restore the nation to democracy. On 19 December troops were alerted, marshaled, and launched; the actual military operation began at 0100 hours on 20 December. The forces utilized included troops from the 7th Infantry Division, 82nd Airborne Division, the 5th Mechanized Division, U.S. Marines, Rangers, Sea-Air-Land (SEALS), Special Forces, and USARSO's 193rd Infantry Brigade (Light). Support was provided by the 830th Air Division, the 24th Composite Wing from Howard AFB, the USARSO 41st Area Support Group, and the 1109th Signal Brigade. In total, more than 27,000 military personnel were involved. The plan called for multiple simultaneous assaults to seize and secure the international airport, the PDF garrison at Fort Amador, the PDF headquarters (Comandancia) in Chorrillo, the Bridge of the Americas over the canal at the Pacific entrance, Balboa Harbor, and Paitilla Airport in Panama City. Atlantic-side forces were to isolate the city of Colon and neutralize PDF forces at Coco Solo and Rio Hato. The Special Forces were tasked with reconnaissance and surveillance missions at more remote locations, securing communication sites, and the rescue of any American hostages.¹¹

The events of 20 December went mostly according to the plan. Targets were secured but resistance was met, particularly in the PDF strongholds at Fort Amador and in the Chorrillo area. Every tactical objective of the operation was successfully

"Humvees from the 5th Battalion, 87th Infantry and the 519th Military Police Battalion sped out the front gate of Fort Clayton across the narrow tracks of the Panama railway, and snaked along the narrow, twisting road to the raised embankment of the Miraflores Locks. The lightly armed Panama Canal Commission security guards made no attempt to resist the American combat troops . . . Manuel Noriega had vowed to sabotage the Canal, should America intervene militarily. But if the PDF intended to strike the vital Miraflores Locks, they would have to fight their way through Claymore mines and interlocking machine-gun fire to do so."¹³

achieved by sunset on 20 December. Canal operation was suspended for only 30 hours. True to their longtime mission of canal defense, one of the first actions for troops guarding Fort Clayton involved Miraflores Locks.¹²

During the next several days, U.S. forces swept the city for remaining PDF and Dignity Battalion forces. Little organized resistance was met. Once the city was secured, U.S. forces fanned out into the countryside, accepting the surrender of PDF forces in various Panamanian towns. In Panama City, within hours of the first military action, waves of refugees began fleeing the fighting and the destruction around the Chorrillo neighborhood. The Balboa High School stadium became a makeshift refugee camp until a better-equipped displaced persons camp was set up at Albrook Air Force Station.

Noriega, who had dropped out of sight during the first assault, surfaced on Christmas Eve at the Papal Nunciature, the Vatican's Embassy, seeking asylum. On 3 January 1990, however, he left the embassy and was immediately detained by U.S. forces and flown to Miami for arraignment. Clean-up operations followed, and *Operation Just Cause* was officially ended on 31 January 1990. The next day, *Operation Promote Liberty* was launched to help reestablish a democratic government in Panama, resuscitate the economy, and provide other nation-building services.¹⁴

Fort Clayton in the Thick of Things

Fort Clayton played two key roles in *Operation Just Cause*. First of all, the 193rd Infantry Brigade (Light), designated Task Force Bayonet, was given the objective "to seize and secure the Curundu-Ancon-Balboa areas by ground attack and to conduct an air assault to secure Fort Amador and neutralize the PDF's 5th Company garrisoned there."¹⁵ An attached mechanized infantry battalion task force was to isolate the Comandancia. Additionally, the task force was to seize and secure various PDF sites around the area. Units from Task Force Bayonet attacked from both the front and rear gates of Fort Clayton, with troops proceeding into Balboa and others to

Curundu. At the same time Task Force Bayonet members began the air assault on Fort Amador and the ground attack on the Comandancia. Task Force Bayonet successfully completed all its missions before the day was out.¹⁶ Fort Clayton itself went virtually unscathed in the fighting. Early on the morning of 20 December mortar rounds crashed to earth inside the post. Seeing the smoke, soldiers ran toward the motor pool hoping that no one had been hit. To their relief, the only victim of the mortar volley was a five-ton truck.¹⁷

Secondly, headquarters for the entire operation were located at USARSO headquarters, Building 95 at Fort Clayton. Joint Task Force-Panama became Joint Task Force-South for the operation. USARSO facilities and staff, both military and civilian, were utilized in the planning, preparation, and execution of *Operation Just Cause*.

Finally, Fort Clayton hosted a historic political event as the operation got underway. Panamanian President-Elect Guillermo Endara and Vice Presidents Ricardo Arias Calderon and Guillermo Ford were escorted to Fort Clayton where their oaths of office were administered by the President of the Panamanian Human Rights Committee.¹⁸

Post-Treaty Construction Projects

Utility Maintenance and Upgrades

With 20 years between treaty implementation and conclusion, utility maintenance and upgrades could not be ignored. In 1986 plans were developed to upgrade the electrical system on Fort Clayton and other Pacific-area posts. At Fort Clayton the improvements were targeted at the family housing areas northeast of the main post. The upgrades continued through 1990 with replacement of the primary cables in the 200 barracks area and the installation of new street lighting in the 1000 housing area.

Residential Construction

The FY 1975 MCA project was the last housing constructed at Fort Clayton. (See chart on facing page for a summary of all housing types constructed throughout Fort Clayton's history, eras of origin, etc.) In addition to helping eliminate the decades-long military housing deficit these quarters were needed to improve the quality of housing stock for the all-volunteer Army. Plans were drawn up in 1977 and construction was completed in 1979. Contractor for the project was Wilson and Savage, Inc., of Memphis, Tennessee. Two building configurations were designed: a four-bedroom, two-family type and a two-bedroom, four-family type. Construction costs for each type of building were \$106,344 and \$136,206, respectively. The 200 housing units under this program were constructed in two discrete areas. One group (900 area) was located in the corner created by the intersection of Muir and Hospital Roads, across from Officers' Row. This land was at the edge of the original fill and lower than the surrounding area, so a large amount of grading and controlled drainage was necessary. The 80 quarters were mostly concentrated around a looping street. The second group (1100 area) was placed along Clayton-Albrook Road across from the officer and civilian housing area built in 1969. The land was lightly terraced for the 120 quarters, which were constructed along three streets. Fully equipped playgrounds were provided for the housing areas.

Summary of Housing Types Constructed on Fort Clayton, 1920–1999.

Quarters Type	Year	Drawing Number(s)	Building Number(s)
CO (2F3)	1920	4273	2-4, 6-8, 12-17
CO (4F3)	1920	4915	1, 9-11, 18-19
NCO (4F2)	1920	5036	20
NCO (4F2)	1920	7851	802-803, 805, 807, 814-815
CO (1F5)	1922	4990	5
FO (1F3)	1933	4215	72-85
NCO (4F2)	1933	4216	800-801
FO (1F3)	1935	4220	86-87
BOQ (24 Apts)	1936	4644	400
FO (1F3)	1940	SK 1561	88-92
FOType 4 (1F4)	1942	625-6315	426, 430-434
NCO (2F3)	1942	625-5570	307
NCO Type 4 (1F2)	1942	625-5560	308
CO Type 6 (2F3)	1942-43	625-5570	401-414, 416-417, 419-424, 427-428, 506-511
NCO Type 3 (2F2)	1942-43	625-5550	301-306, 309-316, 318-323, 325-340, 501-505
CO Type 4 (1F3)	1943	625-9445	515
FOType 5 (1F4)	1943	625-6315	512-514, 516-517
Guest House (40 Apts)	1943	5135	518
NCO (2F3)	1948-49	4643	350-385
NCO (2F3)	1960	25-23-01 (Sht 70)	470-481, 804, 806, 808-813, 816-841, 843, 850-867
BOQ (8B1)	1964	25-23-06 (Sht 28) 5123-2	157, 500
NCO (4F2)	1964-65	25-23-04 (Shts 77/78)	531, 541, 551, 603-604, 611, 617, 631, 654, 656, 677
NCO (4F3)	1964-65	25-23-04 (Shts 77/78)	531-540, 542-549, 552-555, 557-561, 600-602, 605-606, 608-610, 612-615, 618-629, 632-639, 641-650, 652-653, 655, 657-659, 661-674, 676, 678-685, 687-691
NCO (4F4)	1964-65	25-23-04 (Shts 81/82)	550, 556, 607, 616, 630, 640, 651, 660, 675, 686
FO (2F3) (3FG2)	1965	25-23-05 (Shts 124/125) 5123-1	23, 26, 460, 464
FO (2F4) (4FG2)	1965	25-04-05 (Shts 128/129) 5123-1	22, 24-25, 461-463
CG&WO (2F4) (C4A2)	1969	25-23-10 (Shts 123/124)	1012-1013, 1049, 1051
CG&WO (4F2) (EC2D4)	1969	25-23-10 (Shts 106/107)	1000, 1002, 1006-1007, 1009-1010
CG&WO (4F4) (C4A4)	1969	25-23-10 (Shts 123/124)	1001, 1003, 1050, 1058-1060
CG&WO (6F2) (EC2D6S)	1969	25-23-10 (Shts 106/107)	1005
LC&MAJ (2F3) (F3B2)	1969	25-23-10 (Shts 126/127)	1023-1033, 1042, 1047-1048, 1062
LC&MAJ (2F4) (F4A2)	1969	25-23-10 (Sht 132)	1041, 1043, 1061
NCO (2F4) (E4A2)	1969	25-23-10 (Shts 115/116)	700, 703-704, 706, 717, 720, 722, 1055, 1057
NCO (4F2)(EC2D4)	1969	25-23-10 (Shts 106/107)	573-575, 577-578, 580-581, 701-702, 705, 708-709, 716, 718-719, 721, 723-726
NCO (4F3) (E3A4)	1969	25-23-10 (Shts 113/114)	1052, 1056
NCO (4F4) (E4A4)	1969	25-23-10 (Shts 115/116)	570-572, 579, 707, 715, 1053-1054
NCO (4F2)	1978	25-18-03	917, 919-920, 922-923, 925-926, 928-929, 931-932, 934, 1100, 1102-1103, 1105-1106, 1109, 1111-1113, 1115-1116, 1118, 1120-1122, 1138
NCO (2F4)	1978-79	25-18-03	900-901, 903-904, 906-907, 910-912, 914-916, 935-937, 939, 1124-1125, 1128, 1131, 1133-1134, 1137, 1140-1141, 1143, 1146, 1148, 1152-1153, 1155, 1157, 1159, 1161-1162, 1164-1166, 1168-1169, 1172-1174, 1176, 1178, 1180

Notes: CG&WO = Company Grade & Warrant Officer; LC&MAJ = Lieutenant Colonel & Major; Sht(s) = Sheets

These quarters were built on a reinforced concrete foundation, with walls of wood studs and gypsum board. This bill of materials was significant in that it was the first time family housing on Fort Clayton was *not* made of concrete block. The roofing material was steel coated with baked enamel. The exterior finish for the first floor was stucco, and for the second floor was either horizontal or vertical siding. Some units had stucco panels under the second-story windows. All units had single-hung aluminum windows.

The four-family, two-bedroom buildings had a central carport with capacity for four cars [7.03]. Access to the apartments was provided by a central staircase open on both floors. The apartments were on one level, with two complete sets on each floor. On the first floor, the center rear, behind the staircase, held a row of storage rooms. On the second floor this area was an open platform with a safety railing. The apartments were entered from a short hallway running perpendicular to the stairway. A foyer led to an open living room/dining room that ran from front to back through the apartment. Across this area was a hallway with bedrooms at each outside corner and a central bath. A sliding glass door led from the living room to a patio with privacy screens. On the second floor, the patios became decks with railings, and the main building roof continued over the deck.

The two-family, four-bedroom buildings had individual carports at the sides of the building. Entry was through the carport to a utility room, or through the front door into a foyer. A storage room, half bath, and the utility room ran along the outer wall, with a staircase to the right. The kitchen was toward the rear of the unit. The right half of the unit consisted of a living room/dining room with a sliding glass door to the patio. Upstairs were bedrooms in each corner. The master bedroom (rear outside) had an attached full bath. Another full bath was located in the center of the outside wall. The patios were covered by the same baked enamel steel roofing.

Several other changes during this period affected large groups of family housing. Starting in the early 1980s and continuing for most of the decade, rising security concerns prompted better housing protection. Security bars had been installed on



[7.03] Four-family, two-bedroom NCO family housing units (Buildings 916 and 917) showing center carports and open center stairway. Note rolling topography typical of the 900 housing area.

windows of new construction since the 1960s; during the 1980s, steel security bars were installed on older housing, and more were added to newer housing to supplement those already in place [7.04]. In 1986 plans were drawn up to provide central air conditioning systems to a large number of older family housing units built between 1920 and 1942. In addition to Fort Clayton, this program covered housing at Fort Gulick, Herrick Heights, Fort Kobbe, Quarry Heights, Fort Sherman, Fort Amador, Corozal, Curundu, and Fort Davis. At Fort Clayton, this affected Buildings 5, 72–92, 401–434, 501–517, 800–803, 805, 807, 814, and 815.

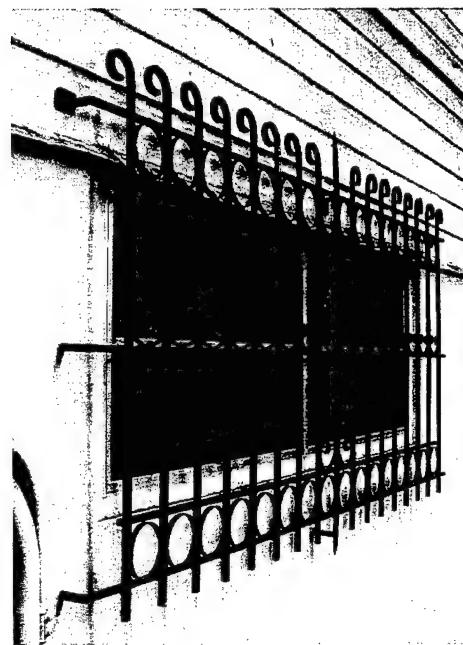
USARSO Headquarters (Building 95)

Implementation of the Panama Canal Treaties in 1979 resulted in a major modification of Building 95 when it became headquarters for USARSO, the regional Army command. Nearly all the interior areas of the building were converted to administrative uses. The Army Education Center moved out, and the PX was reduced to a shoppette, although the cafeteria remained. The post office branch was increased by about 1000 sq ft. The Post Library was moved to the center area of the third floor. New tenants included offices for Protocol, Public Affairs, Logistics, Budget Division, Management Division, Operations, Security, and the Command Group. Security was increased as the USARSO offices came into the building. Phone lines and utilities were upgraded, and a secure computer room was installed in 1984. The exterior walls were extended downward to enclose the crawl space. Security and utilities continued to be periodically upgraded through the early 1990s. By 1990, tenants included Operations, Personnel, Intelligence, Logistics, and Information Management, a Treaty Implementation office, Military Police, Protocol, Public Affairs, and the Command Group. As of 1997, the building had a total value of about \$9.22 million.

Several changes were also made to the grounds and facilities around Building 95. In 1984 a landscaping plan for the rear of the building resulted in a semicircular drive leading up from Gaillard Avenue to the sally port entrance. In the center of the arc was a group of ornamental plantings and stone pavers. A long canopy was installed leading from a rear exit directly to the south of the sally port to the street. The fabric canopy was replaced in 1993 with a red Spanish tile roof. A series of new plantings around the building occurred in 1983 with the addition of hedges, shrubs, ornaments, and palms. A heliport was established behind Building 95 for headquarters use in the late 1980s. In 1996 an informational marquee was erected at the northwest corner of the building.

Community Facilities

In the aftermath of *Operation Just Cause* there was an upturn of theft in the 600 housing area. To improve security for local residents a small military police (MP) station was built, probably in 1990 (although the property record specifies no date). This structure, the Ada Nice Place Community Center (Building 695), was located on Cardenas Avenue next to Quarters 683. The simple structure is of some passing interest because its design appears to have been based closely on a World War II-era plan for a temporary MP facility. With less than 10 years to go before Fort Clayton would be



[7.04] Typical security bars in the 300 Area Housing.

transferred to the Republic of Panama, this wood and screen-sided structure was built expediently and inexpensively, and was not necessarily expected to endure a whole new century of tropical humidity, mold, and insects.

As would be expected in the continuing drawdown environment of Fort Clayton (and the other Army bases in Panama), very little other nonresidential new construction was undertaken during the installation's last 20 years. Upgrades to playgrounds, bus stops, softball fields, the motor pool area, and power transformers were the most common projects. However, two projects of limited scope did help to enhance the quality of life: the construction of a food court and a laundromat. Located on a triangular piece of land between Morse Avenue, Connor Street, and Craig Avenue, the food court included a Burger King and a Popeye's chicken restaurant.

The final element added to Jarman Field, at the park entrance, was a miniature replica of the Statue of Liberty. The 7.5 ft statue was presented to the Panama Canal Zone Boy Scout Council by Morris Hoffman, a scouting enthusiast, in May 1951. Originally displayed at the Canal Zone library, the statue was later moved to a main intersection near the Balboa Police Station. Still later it was moved to the foot of the Administration Building in Balboa, where on several occasions it was vandalized during anti-U.S. demonstrations preceding *Operation Just Cause*. From there the statue was removed and put into storage until 1991, at which time it was put on display at the corner of Morse and Craig Avenues. In 1999, in preparation for base closure activities, it was determined that the Statue of Liberty replica would be relocated to the grounds of the residence of the U.S. Ambassador to the Republic of Panama in La Cresta, Panama City. This transfer was completed in July 1999.¹⁹

Reutilization Scenarios for Fort Clayton

The Panamanian government has developed various plans for the disposition and reuse of Fort Clayton. At this point, three possible futures stand out.

First, some or all of the housing units may be put up for sale to private individuals. This precedent was established with earlier reversions in the former Canal Zone, the most successful of which was Albrook Air Force Station. At Albrook, tropical duplexes were purchased and extensively renovated by the new owners. These renovations differentiated the houses from neighboring buildings but, at the same time, conveyed an impression of Panamanian cultural traits across the former base. There is a high probability the same sort of property conveyance will occur at Fort Clayton.

Second, the government is endeavoring to establish the City of Knowledge (Cuidad del Saber) and the International Technopark of Panama on the site. The intended purpose of this enterprise is to combine academics, research, cultural exchange, and technology production to create a regional nexus for technology and business development in Panama. The City of Knowledge and the Technopark hope to attract an international clientele of companies working in seven cluster areas: biodiversity, aquaculture, marine resources, tropical medicine, data processing, multimedia, and banking software. If this initiative succeeds, the main campus will be located at the Clayton quadrangle area.

there is the possibility that some portions of Fort Clayton's built environment will be demolished. There is precedent for this at Albrook Air Force Station, Quarry Hill, and others, where historic buildings have been destroyed. A more extreme fate by the Panamanian owners could even see Fort Clayton follow Fort Amador into oblivion; since reversion to Panama, Fort Amador has been systematically razed. The vast majority of its buildings have been demolished, and the ones that stand have little historic or thematic context to unify them. The current plan for the Fort Amador site is to transform the entire area into a resort hotel and cruise port. Essentially, Fort Amador no longer exists.

a similar fate could conceivably be in store for Fort Clayton.

Notes for Chapter 7

Public Affairs Office, 193rd Infantry Brigade, U.S. Army South, "Impact of the Panama Canal Treaty on the United States Military in the Panama Canal Area" (Fort Clayton, Republic of Panama: USARSO, n.d.), 1-3; McDonald, *Schooling in the Panama Canal Zone*, 1, 23-25.

Public Affairs Office, "Impact of the Panama Canal Treaty," 3; Public Affairs Office, U.S. Army South, "Public Information Paper" (Fort Clayton, Republic of Panama: USARSO, 1989), 2-6; De Mena, *The Era of U.S. Army Installations in Panama*, 134.

"Fort Clayton," (#1), (n.p., n.d.), 5; Bernard Johnson Incorporated, "U.S. SOUTHCOTM Panama, Regional Complex Master Plan, Vol. 1-Report" (Mobile, AL: U.S. Army Engineer District, 1986), 9-10; William R. Evinger, *Directory of U.S. Military Bases Worldwide* (Oryx Press: np, 1995), 268-269.

Bernard Johnson, "USSOUTHCOM Master Plan, 7.

- 5 Ibid., 8.
- 6 Heike Hasenauer, "The Canal-A Historic Shortcut," *Soldiers*, July 1999: 40.
- 7 De Mena, *The Era of U.S. Army Installations in Panama*, 134-135; Morris, *Security and Defense of the Panama Canal*, 137-140.
- 8 Morris, *Security and Defense of the Panama Canal*, 140-141; Dolores De Mena, "Annual Command History, Fiscal Year 1990; Operation Just Cause/Promote Liberty Supplement" (Fort Clayton, Panama: USARSO History Office, 1993), 4-5.
- 9 Morris, *Security and Defense of the Panama Canal*, 142; De Mena, "Annual Command History, Fiscal Year 1990," 5-8.
- 10 Morris, *Security and Defense of the Panama Canal*, 143; De Mena, "Annual Command History, Fiscal Year 1990," 10-11.
- 11 De Mena, "Annual Command History, Fiscal Year 1990," 13-14; "Panama! Operation Just Cause", *Airman*, (February 1990), 28.
- 12 Morris, *Security and Defense of the Panama Canal*, 143.
- 13 Malcolm McConnell, *Just Cause: The Real Story of America's High-Tech Invasion of Panama* (New York: St. Martin's Press, 1991), 147.
- 14 De Mena, "Annual Command History, Fiscal Year 1990," 23-27.
- 15 Ibid., 13.
- 16 Ibid., 16-20.
- 17 De Mena, "Annual Command History, Fiscal Year 1990," 88.
- 18 Ibid., 13-27; McConnell, *Just Cause*, 93.
- 19 Charles S. McElroy, "Lady Liberty: Symbol of lasting freedom finds a new home," *Tropic Times*, 12 July 1999; Stuart G. R. Warner, former Archivist, U.S. Army South (USARSO), Fort Clayton, electronic communication with author dated 14 July 2000.

CHAPTER 8

The Final Chapter

The Last Drawdown

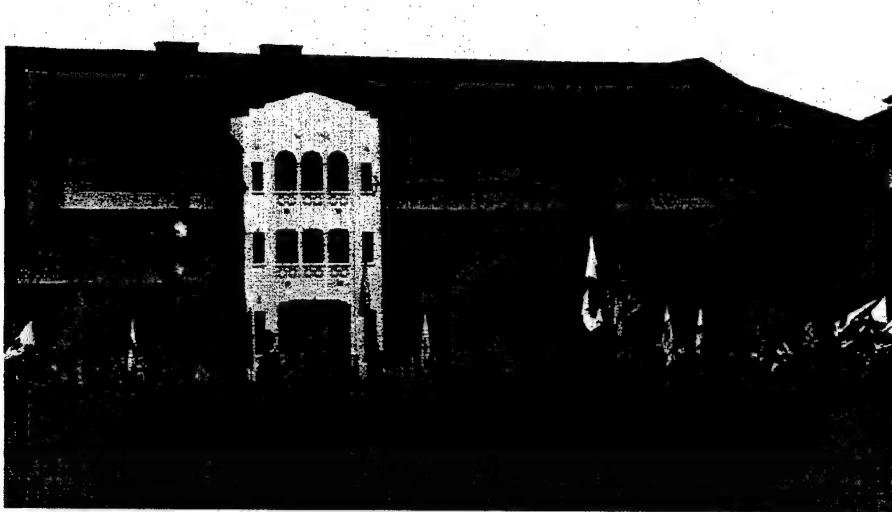
As the transfer date for the Panama Canal drew nearer, the final drawdown of forces began at Fort Clayton. The main Army component on post, the 193rd Infantry Brigade (Light), cased its colors on 14 October 1994. (One of its subordinate commands, the 5th Battalion, 87th Infantry, remained active at Fort Clayton until 15 October 1996.) In 1995 the 3rd Special Operations Support Command and the 128th Aviation Brigade left Fort Clayton; major units remaining at that time were the Military Police Command, U.S. Army Garrison-Panama, and the 106th Signal Brigade. Tenant units included the American Red Cross, the Army Recreation Machine Program, Southern Command Network, the Training and Doctrine Command (TRADOC) Liaison Office, and the U.S. Army Trial Defense Service [8.01, 8.02].¹



[8.01] Aerial view of Soldier's Field Quadrangle with the rear of Building 129 in foreground, ca. 1996.



[8.02] Overview of Fort Clayton and the canal from Gun Hill.



[8.03] U.S. Army South Departure Ceremony at Soldier's Field, Fort Clayton, 30 July 1999.

USARSO headquarters relocated to Puerto Rico in August 1999. On 30 July 1999, a departure ceremony was held for USARSO at Soldier's Field, Fort Clayton [8.03]. A crowd of military and civilian personnel watched as USARSO cased its colors. To symbolize the historic role of the U.S. Army in Panama, a ceremonial color guard was dressed in uniforms representing the first infantry soldiers at Fort Clayton [8.04].

Fort Clayton was one of the last active U.S. military installations in the Republic of Panama, completing its mission only 1 month before the transfer of the Panama Canal. For its last few months as a U.S. Army post it housed only a small security force. The Stars and Stripes flying over Fort Clayton were lowered for the last time in a 30 November 1999 ceremony. Three identical sets of U.S. and Panamanian flags were raised and lowered during this ceremony. On the following day, 1 December 1999, Simon Ferro, the U.S. Ambassador to Panama, presented a set of the ceremonial flags to President Mireya Moscoso. This action brought to an end the final chapter in the story of Fort Clayton, which for almost 80 years stood as a sentinel on the Pacific to help guarantee the world safe transit of the Panama Canal.

The Final Face of Fort Clayton

By Treaty Implementation Day in 1979, Fort Clayton had essentially matured into its final configuration. In 1999, the final value of the facilities on post was placed at \$119,943,000.² Stretching from the 200 barracks area in the northwest to Curundu Elementary School at its southeastern edge, Fort Clayton presented the classic image of a tropical U.S. military community. The use of similar building materials over time helped to create a sense of unity and identity for Fort Clayton, and also marked it as part of a greater community of U.S. military installations whose purpose was to ensure the security of the Panama Canal in peace and in war. The importance of Fort Clayton's role in this community of military installations was declared by the formal arrangement of large barracks around the main quadrangle, and the massive presence of Buildings 95 and 519. Housing areas were well defined and mostly separated



[8.04] Ceremonial Color Guard, U.S. Army South Departure Ceremony at Soldier's Field, Fort Clayton, 30 July 1999.

from other functional activities. This layout provided a sense of place for residents and served as a safe play environment for the children of U.S. military personnel. As the century progressed Fort Clayton evolved from a utilitarian Army installation into a true home for the force: a self-contained family-oriented community that is fondly remembered by the many who had the privilege to serve there [8.05].

The End of an Era

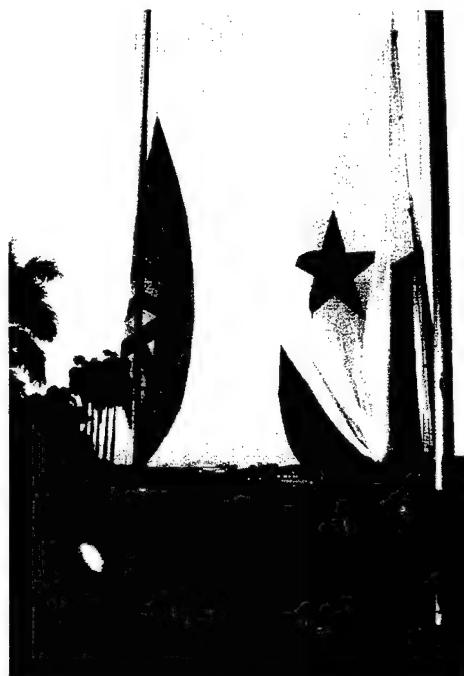
For almost 80 years Fort Clayton and its battle-ready troops stood watch over the Panama Canal, and the primary mission of canal defense was achieved fully and with distinction. The waterway was never damaged through sabotage or organized military attack—not even in the midst of the most destructive conflict in human history. That in itself is a remarkable accomplishment considering the strategic importance of this little strip of real estate to the adversaries in a two-hemisphere war. The gates were, indeed, well guarded.

In addition to being recognized for the role it played in guarding The Eighth Wonder of the World during the 20th century, Fort Clayton may also be acknowledged as a dignified and potent symbol of America's commitment to unencumbered transit between two oceans for the ships of all nations. The fulfillment of that commitment has helped not only to ensure the canal's place in the history of the Americas, but to establish it as part of a global shared heritage.

But there can be little doubt that Fort Clayton left its deepest mark on the men, women, and children who ever called it their home for a time. As Major General Philip R. Kensinger, Jr. spoke at the USARSO departure ceremony at Fort Clayton on 30 July 1999 it was clear that he was eulogizing something more dear to his audience than a well planned, tidily landscaped collection of government buildings customized for a tropical setting:

In a few short minutes we will case our colors and finish this ceremony. Some of you may walk over to the reception, passing the solemn, empty buildings that have seen so many soldiers come and go . . . All of you, though, before you leave, will probably want to walk or drive about the Fort a bit, maybe for one last time, to capture in your mind and heart a final picture—a well trimmed school yard where your children played—an empty stable where horses once lopped about—a set of quarters that you once called home. I'd also like to add another place, one which isn't even on Clayton, the Miraflores locks just across the way. From there you can see those ingenious locks that enable the canal to operate—and you can see the Gaillard cut through the mountains that only the United States could make—and finally, you can turn back and see Fort Clayton, its flag flying high and proud in the humid, tropical air of Panama. A canal, a country, a fort. The names are easy to remember. The sight is one that will live in your heart forever.

**Major General Philip R. Kensinger, Jr.
Commanding General
U.S. Army South and Joint Task Force—Panama
Fort Clayton, Panama, 30 July 1999**



[8.05] The flags of the United States of America and the Republic of Panama at Fort Clayton, lowered at sundown.

Notes for Chapter 8

1 De Mena, *The Era of U.S. Army Installations in Panama*, 135.

2 Jim Page, Directorate of Engineering and Housing, USARSO, electronic communication to Raul Irigoyen, Directorate of Engineering and Housing, USARSO, 19 November 1999.

Images

Editor's note: The DEH, U.S. Army Garrison—Panama is cited below as the source for many images reproduced in this document. Because this DEH repository no longer exists, the images are in the process of transfer to the National Archives and Records Administration. No accession numbers are available at this time, however, because the transfer and accessioning process has not been completed at the time of publication.

[Cover Photo]

Initial appearance of Fort Clayton showing relationship to the Panama Canal (looking southeast to Pacific Terminus). Private collection of Vicente A. Pascual.

1 The Origins of U.S. Presence in Panama (1513–1917)

- [1.01] Bird's-eye view of the canal and Canal Zone, from sea to sea. The Panama Pacific Line, *My Trip Through the Panama Canal from the Atlantic to the Pacific*, (New York: International Mercantile Marine Company, 1932). Private collection of Julie L. Webster.
- [1.02] Soldiers on steam shovel in Culebra Cut. Wibert and Dixon, *Pictorial Panama Canal*. Private collection of Julie L. Webster.
- [1.03] 'Uncle Sam' at the Panama Canal, illustrated in a commemorative article on the 20th anniversary of the opening of the Panama Canal. *Cleveland Plain Dealer*, 12 August 1934, 1. Private collection of Suzanne P. Johnson.

2 Standing Up Fort Clayton (1917–1922)

- [2.01] The Miraflores dump area, future site of Fort Clayton. This photograph was taken in 1911 from the hill near the Panama Railroad tunnel entrance. Private collection of George M. Chevalier.
- [2.02] Surveyed and drawn by the 10th U.S. Infantry in 1913, this map shows the future site of Fort Clayton as "Miraflores Dump" (near bottom right). National Archives and Records Administration (NARA), Cartographic Division.
- [2.03] Fill has been completed, 1919, and construction of Fort Clayton is set to begin. This photograph was taken from above the Panama Railroad tunnel entrance. Private collection of George M. Chevalier.
- [2.04] Panama Canal Department, Army Enlistment Poster. Private collection of Vicente A. Pascual.
- [2.05] Colonel Bertram T. Clayton. U.S. Army Military History Institute, Special Collections. Carlisle Barracks, Pennsylvania.
- [2.06] Rio Cardenas Bridge. Martin Stupich, photographed for Construction Engineering Research Laboratory (CERL), Engineer Research and Development Center, U.S. Army Corps of Engineers, November 1999.
- [2.07] Native tropical vegetation still thrives along this road at Gun Hill. Photograph by Martin Stupich for CERL, November 1999.
- [2.08] Proposed plan for Fort Riley, Kansas (1887), showing similarities between artillery post layout and initial layout of Fort Clayton. Webster et al. 1993, 18.
- [2.09] Typical dry closet heating element assembly. Directorate of Engineering and Housing, U.S. Army South.
- [2.10] Concrete drain details. Directorate of Engineering and Housing, U.S. Army South.
- [2.11] To prevent ponding in this often rain-soaked environment, paved culverts help direct runoff down to the Cardenas River. Photograph by Martin Stupich for CERL, November 1999.

- [2.12] This type of slatted wall opening is representative of an architectural detail that was used throughout the interior spaces of early post housing to improve ventilation. Photograph by Martin Stupich for CERL, November 1999.
- [2.13] M Company, 33rd Infantry, in formation in front of their barracks. Note the use of numerous large screened windows in the barracks buildings. Private collection of Robert Karrer.
- [2.14] Sketches of typical insect pan and stair gap. CERL.
- [2.15] Traditional (foreground) and modern-style bohios in front of Building 518. Photograph by Martin Stupich for CERL, November 1999.
- [2.16] Wooden Canal Zone building sealed with gas-tight tarpaulins and ready for fumigation with methyl bromide, which penetrates lumber and kills drywood termite colonies. Directorate of Engineering and Housing, U.S. Army South.
- [2.17] Fort Clayton with the Panama Canal in the background. *Infantry Journal*, Volume XXVI, Number 4 (Panama Number), April 1925, 383. Private collection of Vicente A. Pascual.
- [2.18] Map of the first buildings to be constructed at Fort Clayton. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [2.19] Two-family field officers' and captains' quarters. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 2.
- [2.20] Exterior of duplex officers' quarters showing several defining aspects of military construction in Panama. Decorative pilasters appeared on all the original barracks and quarters, and served as a unifying architectural element for the post. Directorate of Engineering and Housing, U.S. Army South.
- [2.21] Four-family lieutenants' quarters. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 4.
- [2.22] Postcard view of Quarters 1-20; alley view showing servants' quarters. Private collection of Robert Karrer.
- [2.23] Six-set lieutenants' quarters. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 3.
- [2.24] Exterior appearance of Building 20. Note the Greek Revival stylistic decoration that appeared on all of the larger quarters and barracks in the initial construction period. Directorate of Engineering and Housing, U.S. Army South.
- [2.25] Four-family NCO quarters. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 5.
- [2.26] Battalion Barracks. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 7.
- [2.27] E Company day room. Private collection of Raymond J. Martin.
- [2.28] Special Barracks. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 6.
- [2.29] Regimental Headquarters. The Panama Canal, *Annual Report of the Governor of The Panama Canal for the Fiscal Year Ended June 30, 1920*, (Washington, DC: GPO, 1920), Plate 1.
- [2.30] Post Exchange in Building 21, Headquarters Building. Private collection of Robert Karrer.
- [2.31] Building 37, Quartermaster Office and Warehouse. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [2.32] Building 54, Utilities Shop and Tool Room. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [2.33] A typical transformer house constructed in 1920. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [2.34] Building 40, Guard House. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [2.35] Front view of Quarters 5. Photograph by Martin Stupich for CERL, November 1999.
- [2.36] Rear view of Quarters 5. Photograph by Martin Stupich for CERL, November 1999.
- [2.37] Aerial view of the first buildings at Fort Clayton. Private collection of Louie C. Jenkins.

3 Settling in for the Century: Between the Wars at Fort Clayton (1923–1935)

- [3.01] 1990s aerial view of Fort Clayton showing elements of design principles from the 1930s. Photograph by Stuart G.R. Warner, Archivist, U.S. Army South.
- [3.02] Aerial view of Fort Clayton prior to 1930s construction programs. Private collection of George M. Chevalier.
- [3.03] Machine gun, pistol, and rifle range, Fort Clayton. Private collection of Vicente A. Pascual.
- [3.04] Members of Machine Gun Company M, 33rd Infantry, Fort Clayton, March 1933. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 164, SC 319745 (WWII)].
- [3.05] Machine gun firing practice at the Fort Clayton Firing Range. Private collection of George M. Chevalier.
- [3.06] Machete instruction showing the correct method of protecting the body when down. Machetes were a basic weapon of jungle troops. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 18, SC 139332 (WWII)].
- [3.07] Troops of H Company, 33rd Infantry, returning from a 'field trip.' Private collection of Louie C. Jenkins.
- [3.08] 2nd Field Artillery troops on maneuvers. Private collection of Vicente A. Pascual.
- [3.09] The Panama City Carnival Queen watches a polo match with General Martin at Fort Clayton. Photograph by J. Fisher, private collection of Suzanne P. Johnson.
- [3.10] A St. Patrick's Day Dance. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 12, SC 131941 (WWII)].
- [3.11] A bride and groom ride on mules as they pass under crossed sabers. Private collection of Vicente A. Pascual.
- [3.12] The tables are set for the 33rd Infantry's Christmas meal. Private collection of Louie C. Jenkins.
- [3.13] The 1928 Canal Zone boxing champion hailed from Fort Clayton, and many of his fellow soldiers rode the train to Colon for the championship bout. Private collection of James H. Sauer.
- [3.14] Baseball enthusiasts watch a game between the Montreal Royals and the Army All-Stars at Balboa, Canal Zone, 14 March 1947. NARA Still Photographs Division [111 SC, SC 297147 (WWII)].
- [3.15] Preparing for the Organization Day Costume Parade at Fort Clayton, 6 July 1926. Photograph by J. Fisher, private collection of James H. Sauer.
- [3.16] 33rd Infantry Organization Day program, 6 July 1940. Private collection of Louie C. Jenkins.
- [3.17] U.S. Army band marches down Avenida Central in Panama City during Panamanian Independence Day parade, 4 November 1942. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 38, SC 175385 (WWII)].
- [3.18] Pass for entering Panama City. Private collection of Vicente A. Pascual.
- [3.19] Crowd leaving the bull ring after a fight, Panama City. Photograph by J. Fisher, private collection of James H. Sauer.
- [3.20] Soldiers relax at the Fort Kobbe Beach Club. Private collection of Joseph DeBenedetto.
- [3.21] Hamburg-American Line advertisement. *Scientific American*, 11 January 1913.
- [3.22] President Roosevelt and Panamanian dignitaries during an FDR visit to the isthmus. Private collection of Raymond J. Martin.
- [3.23] Soldiers snap to attention as FDR passes during his automobile tour of Fort Clayton. Private collection of Louie C. Jenkins.
- [3.24] 2nd Field Artillery patch. Private collection of Vicente A. Pascual.
- [3.25] The 1933 officers' quarters area with curving street and tropical vegetation. Photograph by Martin Stupich for CERL, November 1999.

- [3.26] Company officers' quarters (Buildings 72–85) take shape, 25 May 1933. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 2561].
- [3.27] Houses being erected in "Colonels' Row," Fort Clayton, 25 May 1933. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 164, SC 319760 (WWII)].
- [3.28] Company officers' quarters. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.29] Floor plans for company officers' quarters, Buildings 72–85. Directorate of Engineering and Housing, U.S. Army South.
- [3.30] Elevations for company officers' quarters, Buildings 72–85. Directorate of Engineering and Housing, U.S. Army South.
- [3.31] Field officers' quarters (Buildings 86 and 87) two months after completion, 23 March 1935. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 3516].
- [3.32] Elevations for field officers' quarters, Buildings 86–87. Directorate of Engineering and Housing, U.S. Army South.
- [3.33] Floor plans for field officers' quarters, Buildings 86–87. Directorate of Engineering and Housing, U.S. Army South.
- [3.34] Concrete frame in place and roof construction underway on NCO quarters, Buildings 801–802, 25 May 1933. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 2564].
- [3.35] NCO quarters, Buildings 800–801, 1941–1942. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.36] Elevations for NCO quarters, Buildings 800–801. Directorate of Engineering and Housing, U.S. Army South.
- [3.37] First floor plan for NCO quarters, Buildings 800–801. Directorate of Engineering and Housing, U.S. Army South.
- [3.38] Exterior walls of Building 95 under construction, 28 June 1933. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 2770].
- [3.39] Building 95 center sally port under construction, 28 June 1933. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 2771].
- [3.40] Front elevations, Building 95. Directorate of Engineering and Housing, U.S. Army South.
- [3.41] Building 95 architectural detail. Photograph by Martin Stupich for CERL, November 1999.
- [3.42] 2nd Field Artillery Inspection in front of Building 95. Private collection of Robert Karrer.
- [3.43] The 45th Cavalry celebrates Organization Day in front of Building 95, 1952. Private collection of Robert Karrer.
- [3.44] U.S. forces crossing Miraflores Locks over a lock gate (c. 1928). Photograph by J. Fisher, private collection of James H. Sauer.
- [3.45] U.S. troops at Miraflores Locks (c. 1928). Photograph by J. Fisher, private collection of James H. Sauer.
- [3.46] Building 106, Field Artillery Equipment Shed for One Battery. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.47] Rigging line in Building 50, Rigging Shed. Note the Spanish yokes. Photograph by J. Fisher, private collection of James H. Sauer.
- [3.48] Blacksmith and Woodshed, Building 51. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.

- [3.49] Coal Bin and Loading Platform, Building 56. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.50] Post Storage House, Building 59. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.51] An attempt to mount mules with anti-aircraft machine guns—"the mules didn't like it." James H. Sauer, 2000. Photograph by J. Fisher, private collection of James H. Sauer.
- [3.52] The 2nd Field Artillery prepares for a retiree's final ride. Private collection of Robert Karrer.
- [3.53] Motor Pool Buildings 100, 102, and 103. Photograph by Martin Stupich for CERL, November 1999.
- [3.54] Building 68, Ordnance Storage Magazine. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.55] Hangar and planes at Fort Clayton's Miller Flying Field (c. 1927). Photograph by J. Fisher, private collection of James H. Sauer.
- [3.56] Miller Flying Field consisted of a sod runway and a standard-design Army hangar. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 67, Fort Clayton (2), S.C. 1404].
- [3.57] Building 63, Air Corps Barracks and Operations Office for 12 men. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.58] Soldiers compete in tug o' war at a Panama Canal Department track meet at Miller Field, 1935. Private collection of George M. Chevalier.
- [3.59] Building 52, Gymnasium, 1939. Private collection of Louie C. Jenkins.
- [3.60] Bowling alley in front of the adjoining gymnasium. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.61] Fort Clayton's first swimming pool. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.62] Fort Clayton Officers' Club, Building 38. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.63] The Fort Clayton Military Police motorcycle patrol in front of Officers' Club. Private collection of Robert Karrer.
- [3.64] "El Rancho" beer garden, Panama City. Private collection of Suzanne P. Johnson.
- [3.65] Street view (front) of Service Club, Building 39. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [3.66] Rear beer garden, Building 39, 1939. Private collection of Louie C. Jenkins.
- [3.67] Building 49, Fort Clayton Theatre. Private collection of Raymond J. Martin.
- [3.68] Northeast elevation of Theater (30 September 1934). Directorate of Engineering and Housing, U.S. Army South.
- [3.69] Theatre #1 undergoing rehabilitation for air conditioning (c. 1954). Directorate of Engineering and Housing, U.S. Army South.
- [3.70] Panoramic view of Fort Clayton and Miraflores Locks, 1936. Photography Collection, Harry Ransom Humanities Research Center, The University of Texas at Austin.

4 Hostilities on Two Horizons (1936–1941)

- [4.01] Anti-aircraft warning signal tower constructed at Fort Clayton by The Panama Canal, July 1940. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [4.02] Temporary tent quarters for officers, 1941. Private collection of Arthur R. Datnoff.
- [4.03] Typical style of aluminum jalousies used in Canal Zone Army construction, 28 December 1950. Directorate of Engineering and Housing, U.S. Army South.

- [4.04] 11th Engineers barracks (Buildings 127 and 126), right, with beer garden (Building 39) at left. Private collection of Robert Karrer.
- [4.05] Interior of barracks. Private collection of George M. Chevalier.
- [4.06] 11th Engineers regimental barracks (Buildings 128, 130–132), 4 June 1940. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), QM 129].
- [4.07] Building 129, 11th Engineers administration building. Private collection of Robert Karrer.
- [4.08] 11th Engineers officers in front of their Headquarters Building (Building 129), 1942. “The captain, second man from left sitting, is Andy Goodpaster, who became a 4-star General. All the 11th vets are proud of him.”—Robert H. Tippett, 2000. Private collection of Robert H. Tippett.
- [4.09] Aerial view of U.S. Army Coast Artillery Area, later known as U.S. Army Garrison Area (200 Barracks Area). Photograph by PFC John Brady, 18 September 1964. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 387, SC 612481 (WWII)].
- [4.10] Front and Rear Elevations, Standard Barracks, 200 Men. Directorate of Engineering and Housing, U.S. Army South.
- [4.11] Front, Rear, and End Elevations, Standard Barracks, 100 Men. Directorate of Engineering and Housing, U.S. Army South.
- [4.12] Temporary officers’ quarters, Buildings 88–92. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 61, QM50].
- [4.13] Panama Mobile Force Headquarters Building. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.
- [4.14] Range Houses on Target Range at Chiva Chiva. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 61, QM481].
- [4.15] Targets on the 500-yard range. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 61, QM482].
- [4.16] Front view of the Fire Station and Guard House, 1941. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 35].
- [4.17] Fort Clayton firemen practice a tower and hose drill for Fire Prevention Week, September 1948. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 173, SC 330684 (WWII)].
- [4.18] Presentation of individual awards for Fire Drill Competition, October 1954. Directorate of Engineering and Housing, U.S. Army South.
- [4.19] A soldier “working on her own show at Armed Forces Radio.” The show, called “Doctors Orders,” had a large audience in May 1953. U.S. Army photograph by SFC L. Grigor, NARA Still Photographs Division [111 SC, Box 295, SC 479404 (WWII)].
- [4.20] A Southern Command Network (SCN) radio broadcast. Courtesy *Tropic Times*.
- [4.21] SCN Dish. Photograph by Martin Stupich for CERL, November 1999.
- [4.22] Post Office (Building 151). Private collection of Robert Karrer.
- [4.23] Vehicle maintenance shop (Building 152). Photograph by Martin Stupich for CERL, November 1999.
- [4.24] Fort Clayton railroad spur track under construction. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 87].
- [4.25] View from Headquarters Building showing bus shelters, 1938. Private collection of Louie C. Jenkins.
- [4.26] Members of the 11th Engineers and their Army Day Display at Fort Clayton. Note (left to right in background) beer garden, Theater #2 under construction, gymnasium, and Theater #1. Private collection of Robert Karrer.
- [4.27] Building 71, Theater #2. *Fort Clayton Construction Book*, Directorate of Engineering and Housing, U.S. Army South.

5 Transit Through the Second World War (1941–1945)

- [5.01] Japanese internees prepare to board a train to the Balboa Concentration Camp. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 14, SC 134315 (WWII)].
- [5.02] "Bushmasters" crossing a jungle stream in back of Fort Clayton, June 1942. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 16, SC 136155 (WWII)].
- [5.03] Nurses learning to put their masks on properly during a gas mask drill, March 1942. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 12, SC 131950 (WWII)].
- [5.04] "Halt! Who goes there?" *Pocket Guide to Panama*. War and Navy Departments: Washington, DC, 1943.
- [5.05] A D-6 low-altitude dilatable-type balloon at the Miraflores Locks. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 12, SC 131968 (WWII)].
- [5.06] A dummy plane stands beneath a shelter at Camp Chorrera, Panama, 28 August 1942. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 92, SC 237644 (WWII)].
- [5.07] 1942 map of Fort Clayton showing the new expansion area. Directorate of Engineering and Housing, U.S. Army South.
- [5.08] Interior of WWII-era officer's quarters showing expansive windows and the use of slatted blinds with a center adjustment rod, October 1957. Directorate of Engineering and Housing, U.S. Army South.
- [5.09] Two 'Army wives' chat in a kitchen outfitted with Miami-type jalousie windows, 1950s. USARCARIB Pictorial Division, Directorate of Engineering and Housing, U.S. Army South.
- [5.10] First wartime housing to be completed: the 300 Area NCO quarters. Photograph by Martin Stupich for CERL, November 1999.
- [5.11] NCO single quarters (Building 308). Photograph by Martin Stupich for CERL, November 1999.
- [5.12] Company officers' duplex quarters (Buildings 411–413), 23 September 1953. Directorate of Engineering and Housing, U.S. Army South.
- [5.13] Coast Artillery Headquarters Building, Fort Clayton, October 1942. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 104].
- [5.14] Insignia on palm trees in front of Building 200. Photograph by Martin Stupich for CERL, November 1999.
- [5.15] Anti-aircraft Defense Command Post, Gun Hill. Photograph by Martin Stupich for CERL, November 1999.
- [5.16] A military police dog at work. Courtesy *Tropic Times*.
- [5.17] Searchlights of Battery C, 4th Coast Artillery Corps, on exhibit at a Panama Canal Department Review. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 164, SC 319722 (WWII)].
- [5.18] Standard regimental garages and searchlight sheds. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 115].
- [5.19] Quartermaster maintenance and motor repair shop. NARA Textual Records Division [RG 77, Stack Area 370, Row 53, Compartment 9, Shelf 5, Box 68, Fort Clayton (2), p 141].
- [5.20] Patients in ward for malaria prevention in a hospital at an outpost position, February 1943. Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 92, SC 237693 (WWII)].
- [5.21] Map of Fort Clayton (c. 1943) showing prevailing winds. U.S. Army Medical Museum, Fort Sam Houston, TX.
- [5.22] Fort Clayton Sector Hospital (front view) shortly after completion (c. 1943). U.S. Army Medical Museum, Fort Sam Houston, TX.
- [5.23] Fort Clayton Sector Hospital (rear view) shortly after completion (c. 1943). U.S. Army Medical Museum, Fort Sam Houston, TX.
- [5.24] Fort Clayton medical complex, including nurses' dormitory, male staff barracks, and ranking officer's quarters (c. 1943). U.S. Army Medical Museum, Fort Sam Houston, TX

- [5.25] Enlisted men's barracks under construction near hospital (c. 1941–1942). U.S. Army Medical Museum, Fort Sam Houston, TX.
- [5.26] Special Services personnel perform many duties in Athletic, Recreational and Welfare Activities which include the operation of public address systems in parades, ceremonies, and athletic events. Photograph by S/Sgt L. Grigor, 16 January 1948, Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 147, SC 301769 (WWII)].

6 The Cold War Era and New Missions (1946–1978)

- [6.01] A member of the 242nd Chemical Supply Detachment demonstrates an M-1 smoke pot to personnel participating in *Operation Jackpot II* at Fort Clayton, August 1953. U.S. Army photography by SFC L. Grigor, NARA Still Photographs Division [111 SC, Box 277, SC 458509 (WWII)].
- [6.02] General of the Army Dwight D. Eisenhower motorcades through Fort Clayton during his 1946 visit to the Canal Zone. Private collection of Arthur F. Goldsmith.
- [6.03] Protestors attempting to enter the Canal Zone with flags and signs are confronted by the Panamanian National Guard, 26 November 1959. U.S. Army photograph, NARA Still Photographs Division [111 SC, Box 350, SC 568092 (WWII)].
- [6.04] President Jimmy Carter and First Lady Rosalynn Carter wave to a cheering crowd at Fort Clayton, 17 June 1978. U.S. Army photograph, NARA Still Photographs Division [111 SC, Box 438, SC 678745 (WWII)].
- [6.05] Actor Cliff Robertson and Major General Thomas L. Harrold, Commanding General, USARCARIB, on the set of "The Naked and the Dead," filmed in Panama. U.S. Army photograph by SP3 Paul Johnson, 10 December 1957, NARA Still Photographs Division [111 SC, Box 327, SC 525463 (WWII)].
- [6.06] Soldiers watch fellow Canal Zone GIs help to stage the invasion scene for the RKO film "The Naked and the Dead." USARCARIB troops and equipment provided an essential element of authenticity to the production. U.S. Army photograph by SP3 Paul Johnson, 11 December 1957, NARA Still Photographs Division [111 SC, Box 327, SC 525462 (WWII)].
- [6.07] Two Kuna men from the San Blas Islands. Private collection of Stanley A. Chapman.
- [6.08] Kuna women on Fort Clayton. Photograph by Charlie McElroy, courtesy *Tropic Times*.
- [6.09] Military Amateur Radio Station card of the 2nd Field Artillery. Ham radio operators would note the date, time, group, and location of a contact and exchange cards with one another. Private collection of Wayne Worthington.
- [6.10] Soldiers of the 7448th Women's Army Corp (WAC) Detachment, Fort Clayton, relax in their day room. U.S. Army photograph by SFC L. Grigor, 22 May 1953, NARA [NARA Order Number 111 SC, Box 295, SC 479407 (WWII)].
- [6.11] Two members of the 7448th WAC Detachment clean their quarters. Photograph by SFC L. Grigor, 22 May 1953, Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 295, SC 479400 (WWII)].
- [6.12] Line of 100-man barracks at Fort Clayton showing enclosure of ground floor, reduced window openings, and shingle cladding materials on mediaguas. Photograph by Martin Stupich for CERL, November 1999.
- [6.13] Building 400, showing cantilevered balconies. Photograph by Martin Stupich for CERL, November 1999.
- [6.14] View from Quarters 370–375 showing terraced earthworks. Photograph by Martin Stupich for CERL, November 1999.
- [6.15] The 518th Combat Engineers use a "headache ball" to demolish Building 29. Photograph by SP2 L.W. Guenther, Directorate of Engineering and Housing, U.S. Army South.
- [6.16] 1990s photo of Capehart NCO quarters, Building 820. Directorate of Engineering and Housing, U.S. Army South.
- [6.17] 1990s photo of 1965 four-family, three-bedroom NCO apartments (Building 554). Directorate of Engineering and Housing, U.S. Army South.

- [6.18] 1965 two-story duplex officers' quarters on Morse Avenue. Photograph by Martin Stupich for CERL, November 1999.
- [6.19] 1969 NCO housing (Building 726, front) showing horizontal siding on exterior. Directorate of Engineering and Housing, U.S. Army South.
- [6.20] 1969 officer housing (Building 1028) showing center carports with storage areas and second-floor balconies. Photograph by Martin Stupich for CERL, November 1999.
- [6.21] 1969 officer housing (Building 1061) showing detail of louvered folding doors for carport storage area. Photograph by Martin Stupich for CERL, November 1999.
- [6.22] The new main entrance to Fort Clayton under construction (c. 1954). Directorate of Engineering and Housing, U.S. Army South.
- [6.23] The original (side) gate at Fort Clayton, September 1953. Directorate of Engineering and Housing, U.S. Army South.
- [6.24] Overview from the pistol range. Photograph by Martin Stupich for CERL, November 1999.
- [6.25] Soldiers catch their breath after running physical training. Courtesy *Tropic Times*.
- [6.26] Petting zoo in Miller Field recreation area, 1950s. Private collection of Louie C. Jenkins.
- [6.27] The Post Exchange Shopping Center at Building 95. Photograph by PFC John Brady, 18 September 1964, Signal Corps photograph, NARA Still Photographs Division [111 SC, Box 387, SC 612482 (WWII)].
- [6.28] Monkey and alligator detail for glazed brick wall, Curundu Elementary School. Directorate of Engineering and Housing, U.S. Army South.
- [6.29] Training exercise at Williford Swimming Pool. Photograph by Stuart G.R. Warner, Archivist, U.S. Army South.
- [6.30] Detail of Reeder Gymnasium, Building 52. Photograph by Martin Stupich for CERL, November 1999.
- [6.31] Soldiers run physical training in Reeder Gymnasium, Fort Clayton. Courtesy *Tropic Times*.
- [6.32] Jarman Field grandstands. Photograph by Martin Stupich for CERL, November 1999.

7 From Treaty to Transfer (1979–1999)

- [7.01] A soldier talks with a mother and her children during a disaster relief operation in Bolivia. Courtesy *Tropic Times*.
- [7.02] Flag-waving Kuna Indians from the San Blas Islands welcome U.S. Army soldiers to their village. Courtesy *Tropic Times*.
- [7.03] Four-family, two-bedroom NCO family housing units (Buildings 916 and 917) showing center carports and open center stairway. Note rolling topography typical of the 900 housing area. Photograph by Martin Stupich for CERL, November 1999.
- [7.04] Typical security bars in the 300 Area Housing. Photograph by Martin Stupich for CERL, November 1999.

8 The Final Chapter

- [8.01] Aerial view of Soldier's Field Quadrangle with the rear of Building 129 in foreground, ca. 1996. Private collection of Robert H. Tippett.
- [8.02] Overview of Fort Clayton and the canal from Gun Hill. Photograph by Martin Stupich for CERL, November 1999.
- [8.03] U.S. Army South Departure Ceremony at Soldier's Field, Fort Clayton, 30 July 1999. Courtesy *Tropic Times*.
- [8.04] Ceremonial Color Guard, U.S. Army South Departure Ceremony at Soldier's Field, Fort Clayton, 30 July 1999. Courtesy *Tropic Times*.
- [8.05] The flags of the United States of America and the Republic of Panama at Fort Clayton, lowered at sundown. Courtesy *Tropic Times*.

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